ARTEP 44-635-12-DRILL

PATRIOT CREW DRILLS FOR INFORMATION COORDINATION CENTRAL WITH EPU, COMMUNICATIONS RELAY GROUP, AND TACTICAL COMMAND SYSTEM

OCTOBER 2003

HEADQUARTERS, DEPARTMENT OF THE ARMY

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*Army Training and
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HEADQUARTERS
DEPARTMENT OF THE ARMY
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PATRIOT CREW DRILLS FOR INFORMATION COORDINATION CENTRAL (ICC) WITH ELECTRIC POWER UNIT (EPU) COMMUNICATIONS RELAY GROUP (CRG), AND TACTICAL COMMAND SYSTEM

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*This publication supercedes ARTEP 44-635-12-Drill, dated 4 March 1994.

PREFACE

1. Standardized drills are an essential element to the success of the Patriot ICC, CRG, TCS, and EPU on the battlefield. These drills provide performance measures and a collective sequential set of procedures that, when applied Army-wide, will minimize the impact caused by the turnover in personnel. These drills are for use by the trainers at battery and platoon levels to train their crews to do the selected collective tasks correctly and rapidly. Drill training is an inseparable part of peacetime combat-oriented training, which improves proficiency in mission-oriented individual and collective tasks, maintains high combat readiness, and promotes cohesive teamwork and esprit de corps.

2. This drill publication is among a set of books that includes ARTEPs 44-635-11-Drill, 44-635-12-Drill, 44-635-13-Drill, 44-635-14-Drill, and 44-635-15-Drill all of which contain Patriot standardized drill procedures.

3. This drill publication addresses crew drills for emplacement, march order, and ready for action procedures for the ICC, CRG, and TCS. This drill book is separated into chapters and appendixes with applicable information to assist the platoon leader or platoon sergeant in training his crew.

4. The target audience for this drill includes leaders, trainers, and evaluators of Patriot battalions organized under TOE 44-635.

5. Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

6. The proponent of this publication is HQ, TRADOC. To improve this publication, submit recommended changes on DA Form 2028 to: Commandant, United States Army Air Defense Artillery School, ATTN: ATSA-DT-WF, Fort Bliss, Texas 79916-3802.

CHAPTER 1

UNIT TRAINING

1-1. General. The goal of training is to produce combat ready units that respond rapidly to known or suspected enemy activity and defeat the enemy. Drill training is a key factor in achieving that goal. It describes a training method for small units. This method requires training individual tasks, leader tasks, and collective tasks before the conduct of critical wartime missions. Leaders should tailor training to realistic, challenging, and attainable goals, while increasing the difficulty of conditions as the unit becomes more proficient.

a. A crew drill is a collective action that a crew of a weapon or piece of equipment must perform to use the weapon or equipment successfully in combat or to preserve life. This action is a trained response to a given stimulus such as a simple leader's order or the status of the weapon or equipment. It requires minimal leaders orders to accomplish and is standard throughout the Army.

b. These drills have many advantages:

(1) They are based on unit missions and the specific tasks, standards, and performance measures required to support mission proficiency.

(2) They build from simple to complex and focus on the basics.

(3) They link how to train and how to fight at small unit levels.

(4) They provide an agenda for continuous coaching and critiquing.

(5) They develop leaders and build teamwork and cohesion under stress.

(6) They enhance the chance for individual and unit survival on the battlefield.

1-2. Training Guidance. Crew drills are trained using a talk-through, walk-through, and run-through method. You, of course, must be a master of the drill to train your soldiers to execute it. You may wish to periodically talk your soldiers through the drill- explaining each soldier’s role. Have them go through it slowly, on open ground, correcting any mistakes as they go. Whenever possible, have your soldiers execute drills in new environments to simulate wartime experiences. Train frequently in MOPP and be tough on yourself and your soldiers. Good teams execute instantly and with precision. Your team will pay a high price for failure if they do not.

1-3. Safety Considerations. During the conduct of a drill, all soldiers and leaders must be safety conscious. Prior to the beginning of a drill, all personnel must be briefed on specific safety measures to be observed during the conduct of the exercise.

1-4. Evaluation Information**.** The purpose of evaluating a drill is to determine if the unit can perform all of the performance measures within the allowed standards. During evaluation, concentrate on the units performance, not that of specific individuals. The best location for

observers/controllers is one in which the actions of the entire unit can be observed. Use the drill book as a checklist. We recommend you do not use local checklists, as they can become negative training tools.

CHAPTER 2

CREW DRILLS

2-1. General. A crew drill is a collective action that a crew for a weapon or piece of equipment must perform to use the weapon or equipment successfully in combat or to preserve life. The crew drill task is initiated on a cue and performed to specified standards.

2-2. Crew Drill 44-5-D005.

TASK: Emplace the ICC With EPU for Tactical Operations (44-5-D005).

CONDITIONS: The ICC and EPU are in the march order configuration, and a general location to emplace the ICC has been selected. All components of the ICC and EPU are available and operable. A crew is assigned to emplace and prepare the system for tactical operations in all environmental conditions both day and night. As the ICC crew approaches the selected position, the ICC ground guide orients and positions the EPU and then the ICC to a designated spot and commands, "Halt vehicle."

STANDARD: Emplace and prepare the ICC with the EPU for tactical operations by the performance measures as sequenced in this drill. Complete this drill as prescribed by the ORD.

Notes:

- Allow additional emplacement time when UHF communication corner reflectors and NBC protective entrance assembly A108 are to be installed.
- Allow additional emplacement time per ARTEP 44-637-30-MTP, Figures 5-1 and 5-2 when performing this drill in MOPP4.

SUPPORTING INDIVIDUAL TASKS: Supporting individual tasks for these drills are listed in Appendix A, Individual Task-to-Drill Matrix.

ILLUSTRATIONS: Figures 2-1 through 2-2.

SETUP INSTRUCTIONS: The following equipment, areas, and personnel must be provided for the drill to be trained correctly.

a. Resources. As a minimum, the following are required: One ICC (guided missile, truck-mounted system), and one EPU (trailer mounted). All are included with basic issue items.

b. Training Site. The potential site must be large enough (10x10 meters for ICC, and 5x5 meters for EPU), to prevent fires from hot exhaust. The site should be as level as possible. The maximum allowable slope from front-to-rear or side-to-side is 10 degrees.

c. Unit Instructions. The crew members will emplace and prepare the ICC and EPU for tactical operations at a designated location using the following procedures:

(1) Before the ICC, AMG, and EPUs arrive, the RSOP team will have decided the position of each vehicle.
(2) The RSOP team emplaces the marker stakes and ground rods to show fire distribution section (FDS) vehicle positions.

(3) All FDS vehicles should arrive on site at approximately the same time and stop a short distance from the selected sites.

(4) One crew member from each vehicle serves as a ground guide to direct the driver to position the vehicle at the emplacement site. Crew members will position the EPU first, and the ICC last.

TALK-THROUGH INSTRUCTIONS: The mission of the ICC is to provide the operational control and coordination of the battalion firing batteries. The crew members must be able to emplace the ICC and prepare it for tactical operations where directed within prescribed time limits.

a. Orientation. Before beginning drill training, ensure that each crew member knows the purpose of the drill and is briefed on safety awareness.

b. Safety/Fratricide. All soldiers who operate the ICC and EPU must know that safety hazards exist while operating the various items of equipment. These hazards can and have caused severe injuries to operators. Be extremely careful when working around the ICC and EPU. Throughout the crew drill, observe all dangers, warnings, and cautions required to properly emplace the ICC and EPU. Commanders, trainers, and leaders must plan, train, and stress all procedures, which must be followed to avoid fratricide. These procedures include IFF, weapons control status, vehicle and aircraft recognition, corridors, routes, zones, flight levels, and other control measures. Munitions cannot distinguish between friend and foe.

c. Demonstration (Optional). If a nearby crew has successfully performed the drill, have that crew demonstrate the drill. Explain what is being done and why, using the performance measures as a guide. After the demonstration, summarize.

d. Explanation. Explain the drill in the following manner:

(1) Using a diagram (Figures 2-1 and 2-2), a sand table, or a simple sketch in the dirt, show the crew members how the ICC and EPU should be emplaced.

(2) Tell crew members what their duties are in the drill.

(3) Read the performance measures of the drill to the crew members.

(4) Have each crew member explain their performance measures to ensure that they understand them.

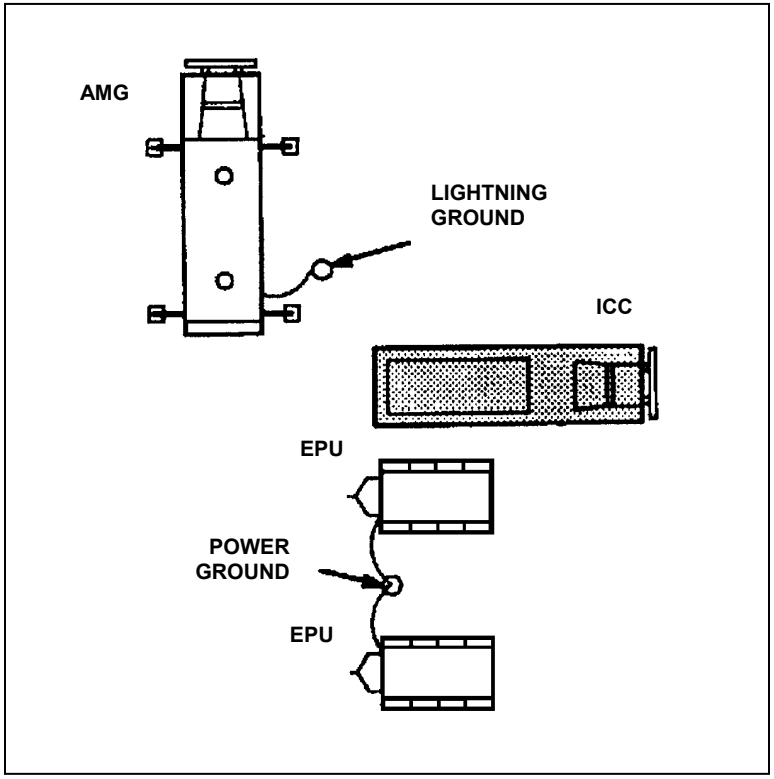

Figure 2-1. Emplaced ICC with EPUs and AMG

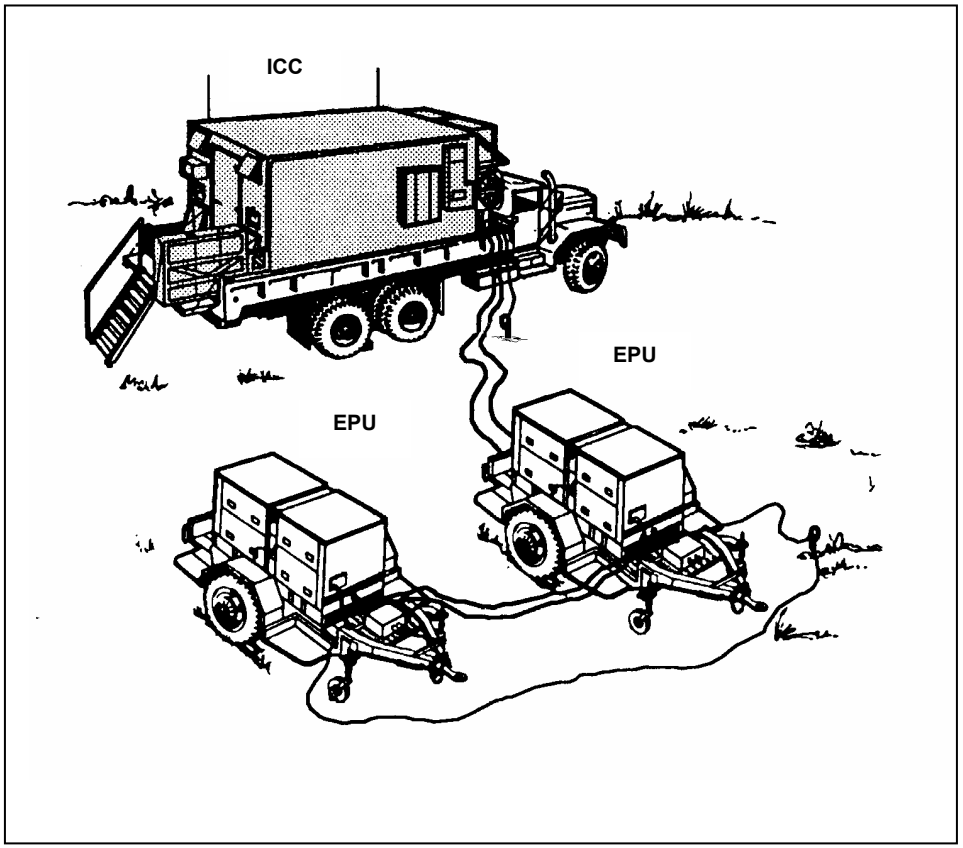

Figure 2-2. Emplaced ICC with EPUs

WALK-THROUGH INSTRUCTIONS:

a. Use the Crawl-Walk-Run Method of Training. Have crew members take their positions and perform the drill. Start the training slowly. Correct any mistakes the crew members make as they go. Do not proceed until drill procedures are done correctly. After the crew members demonstrate their proficiency at a slow pace, let them do it faster. Remember however, that safety is never sacrificed for speed. Watch carefully to make sure the crew members achieve all of the standards for the drill.

b. Initiating Cue. As the ICC crew approaches the selected position, the vehicle ground guide orients and positions the ICC and EPUs to a designated spot and commands, "Halt vehicle."

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated in the sequence shown below. The must synchronize the completion of like-numbered performance measures.

Note: Before proceeding with this drill, read all Danger, Warning, and Caution notices.

WARNING

Hot exhaust may cause fires. Do not park the EPU close to trees, other plant life, or flammable objects.

WARNING

The ICC and EPU should be separated by the maximum distance permitted by cable length and site geography. This will reduce the risk of fire, carbon monoxide poisoning, and noise hazard.

DANGER

Hazardous electrical voltages exist within the system. Do not connect or remove electrical cables while power is on. Serious electric shock, burns, or death may result.

Note: Park the EPU as level as possible. The maximum allowable slop from front-to-rear or side-to-side is 10 degrees. EPUs are emplaced simultaneously with the ICC and AMG. Ground guides will assist EPU operators with disconnecting the M353 trailers (EPUs) from the ICC and AMG. The EPU operator (CM 4) will perform all duties listed under crew member 4.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

To prevent injury or vehicle damage, ensure that vehicle wheels are chocked. Do <u>not</u> get directly in front of or in back of the vehicle <u>until</u> wheels are chocked.

1. Maneuvers the ICC truck to designated position and orients the EPU at marker stake, as directed by CM 2.	1. Directs and orients CM 1 to properly position the ICC truck with EPU at the designated marker stake.	1. Assists as needed.	1. Assists as needed.
Note: For evaluation purpose time starts here.			
a. Halts vehicle when directed by CM 2 and sets hand brake. Sets the truck shift lever to neutral and leaves engine running.	a. Commands, "Halt vehicle." (Refer to Appendix B.)		
2. Confirms with CM 2 that EPU trailer has been disconnected before moving the ICC.	2. Directs ICC driver (CM 1) to move ahead several feet. Commands, "Halt vehicle." (Refer to Appendix B.)	2. Helps EPU operator (CM 4) chock and disconnect EPU from ICC.	2. Chocks and disconnects EPU from ICC.
a. Drives the ICC ahead per CM 2's instructions.		a. Assists as needed.	a. Obtains wheel chocks from storage area, chocks curbside, and roadside wheels. (Refer to Appendix B.)
		b. Assists as needed.	b. Sets hand brakes, lowers curbside, and roadside trailer swivel casters.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		c. Disconnects inter-vehicular light cable. d. Disconnects service and emergency air brake lines <u>after</u> turning off air.	c. Emplaces fire extinguisher on R/S of EPU. d. Assists as needed.

WARNING

Remove and place fuel cans and fire extinguisher on the ground half way between the power units <u>before</u> generator is operated.

		e. Disconnects safety chains. f. Adjusts trailer swivel casters until EPU tongue clears ICC pintle. g. Lowers the EPU tongue to a level position.	
3. Halts vehicle and sets the truck hand brake. Puts truck in neutral and leaves engine running.	3. Directs and orients CM 1 to proper position at the designated marker stake. a. Commands, "Halt vehicle." (Refer to Appendix B.)	3. Assists as required.	3. Emplaces ground rod, if necessary.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
4. When notified by CM 2 that truck wheels are chocked, exits vehicle.	4. Chocks ICC truck wheels. (Refers to Appendix B.) a. Notifies CM 1 that truck wheels are chocked. b. Emplaces fire extinguisher C/S on ICC.	4. Assists as required.	4. Removes trailer ground cable assembly from front of trailer.

WARNING

Truck tailgate and boarding ladder are heavy. To avoid injury, two crew members lower the tailgate and carry the ladder.

WARNING

To avoid damaging equipment, before releasing VHF antennas, ensure there are no overhead hazards. Stay clear of lanyards.

CAUTION

If corner reflectors are to be installed, do not fully release lanyards, as antennas may interfere with corner reflectors.

Note: If ground rods were not emplaced by the RSOP team, CMs will emplace ground rods.

5. Helped by CM 2, lowers tailgate, removes, positions and secures the boarding ladder in center of tailgate.	5. Assists CM 1 lower tailgates, removes, positions, and secures boarding ladder in center of tailgate.	5. Unstows VHF whip antennas.	5. Connects trailer ground cable and ground generator.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		a. Sets roadside intrusion duct appropriately. b. Grounds ICC.	
6. Assists CM 2 with PE storage rack if required.	6. Climbs into truck bed, releases and swings PE storage rack to the side and secures. Unlocks shelter door and secures door lock.	6. Receives and records the magnetic heading of the AMG, if available.	6. Removes all cables from storage tray.
Note: If Protective Entrance A108 is used, refer to Appendix C for installation procedures.			
a. If PE is to be used, installs it at this time.	a. Assists CMs 1 and 3. Installs the PE (if used). Opens and locks all rear air vent doors into position.	a. Assists CMs 1 and 2. Installs the PE (if used).	
b. Raises maintenance platform.	b. Assists CM 1.		

Note: If outside temperature is 40 degrees Fahrenheit or below and only the heat mode will be used, the air conditioner covers will not have to be opened.

CAUTION

If air conditioners are to be used in the cooling mode, covers must be rolled up and secured to prevent damage to equipment.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
7. Assembles JTIDS antenna and rolls up and secure air conditioner covers (if required).	7. Assists CM 1.	7. Assists as needed.	7. Assists as needed.
a. Notifies CM 2 to raise and hold lower mast section, pulls out JTIDS antenna assembly until it clears water intrusion duct	a. Raises and holds lower mast section until JTIDS antenna assembly clears water intrusion duct, then lowers mast.		
b. Sets curbside intrusion duct as appropriate.			

CAUTION

To avoid equipment damage, do not use excessive force when lowering mast section down to mast base retainer, or when engaging lower mast section with mast base retainer.

WARNING

Before raising JTIDS antenna ensure there are not any overhead hazards or power lines. Clear all personnel from antenna path, especially when lower mast section engages mast base retainer. The close clearance between mast base handle and the ICC shelter can injure hands.

c. Climbs down from antenna maintenance platform.			
d. Swings antenna mast stop clear of mast base retainer, notifies CM 2 to raise antenna mast.	d. At rear curbside of shelter, grabs rope on handle of mast counter weight and carefully swings lower mast section down to CM 1.		

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

e. Carefully guides mast base into mast retainer slot.

CAUTION

Filter icing can occur at temperatures on or below 32 degrees Fahrenheit when there is ground fog and or misty freezing rain. Under these conditions or when directed by the commander, set the handle on water intrusion duct to winter position to recirculate the air within the ambient air cooling system. Check filters on rear of shelter for icing during emplacement, if filter icing occurs, remove them until fog lifts or misty rain stops. If these conditions develop during operations, inspect filters periodically until conditions improve.

DANGER

Before connecting AMG cables to ICC, ensure power is off.

Notes:

- If communications plan calls for use of corner reflectors instead of the AMG, skip step 8.
- The primary EPU will be connected to the ICC and the backup EPU will be connected to the primary EPU. If EPU-ICC power and control cables are stowed and connected at the ICC, perform step 8 after performing steps 9 and 10.

f. Secures antenna mast base-to-base retainer using the antenna mast stop.

8. Assists as needed.	8. Assists as needed.	8. At roadside rear of ICC shelter, connects AMG power, control, and RF cables.	8. Removes protective cable caps and connects cables to EPU-PDU.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		a. Connects power cable W1 to shelter connector J29.	a. Connects control cable P6 to PDU J6 connector.
		b. Connects control cables W2 and W11 to connectors J1 and J4.	b. Connects power cable P1 to PDU J1 connector.
		c. Connects RF cables to shelter connectors as follows:	c. Connects auxiliary power/control cable P10 to PDU J10 connector.
		(1) W4--CP8	
		(2) W10-CP7	
		(3) W8--CP6	
		(4) W3--CP3	
		(5) W9--CP2	
		(6) W7--CP1.	

Note: Cables W5 and W6 are not connected. They are used for backup (antenna number 4). Ensure power/control cable P3 to connector J3 on backup generator set is disconnected.

9. Retrieves and connects ICC-EPU power and control cables.	9. Retrieves and connects ICC-EPU power and control cables.	9. Retrieves and connects ICC-EPU power and control cables.	9. Retrieves and connects ICC-EPU power and control cables.
a. Notifies CM 4 that power and control cables are connected to ICC.			

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
10. Assists as needed.	10. Connects cable CX11230 if MSE is available.	10. Assists as required.	10. Removes parallel receptacle-shorting plug and connects the EPU parallel cable between the EPUs.

CAUTION

If EPU prime power is going to be off for an hour or more, to prevent the battery from discharging, keep the engine running or set the BATTERY POWER CB to off.

WARNING

Shock hazards exist. To avoid electrical shock, do not start generators before all ICC, AMG, and EPU cables are connected. Confirm cable connection before generator power up procedures.

11. Opens shelter, enters shelter, and prepares ICC switches for power up. a. Obtains a flashlight (if required). b. At generator control panel (A64), ensures the red safety guard cover is up and switches are set: (1) GENERATOR POWER ECS (ICC) OFF. (2) VOLTAGE PHASE TO NEUTRAL OFF.	11. Ensures all ICC inlet-outlet air and fan doors are open.	11. Assists as required.	11. Prepares generator for use. a. Performs EPU before-operation PMCS. b. Ensures fuel selector valve handle is set at desired position.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
c. At lighting control panel (A71) verifies NORMAL-OFF-MAINTENANCE switch is set to NORMAL.			c. Closes all access doors, except control curbside doors. Locks air vent doors open.
d. At air conditioner control panel (A69 and A70), ensures MODE SELECTION switches are set to OFF.			d. Verifies from CM 1 that the generator power switch is set to off position, before power up.
e. Performs shelter equipment checkout at A66 power distribution panel: (1) LIGHT CONTROL is on. (2) AIR CONDITIONER ROADSIDE and CURBSIDE circuit breakers are on.			e. Confirms all cable connections.
f. At power supply (A25), UHF ANT CONT is off, and all other CBs are on.			

Note: Verify that all ICC exterior inlet-outlet air and fan doors are open. If any CB trips or indicators fail to come on, call organizational maintenance.

g. Notifies CM 4 that the ICC is ready for prime power.

Note: If corner reflectors are not used, skip step 12.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

DANGER

Never attempt to start the generator set if it is not properly grounded. Failure to observe this warning serious injury or death by electrocution.

WARNING

Do not crank the generator engine more than 15 seconds. Allow the starter assembly to cool at least 15 seconds between cranks.

WARNING

Use hearing protection before starting generator. Failure to do so may cause hearing loss.

12. If communications plan calls for use of corner reflectors, helps CMs 2 and 3 to install them per procedures in Appendix D.	12. If communications plan calls for use of corner reflectors, helps CMs 1 and 3 to install them per procedures in Appendix D.	12. If communications plan calls for use of corner reflectors, helps CMs 1 and 2 to install them per procedures in Appendix D.	12. Starts generator set per TM.

Note: Wait for ICC crew members to request prime power to be applied.

13. Requests EPU prime power.	13. Assists as needed.	13. Ensures battery power is on and slave adapter is connected.	13. When notified by ICC crew, holds the CKT BRK switch to CLOSE until the CRT BRK light comes on. (Power is applied to the ICC at this time). Releases CKT BRK switch.

Note: At generator control panel, ensure one GENERATOR-ON-LINE indicator is on before continuing.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
a. At generator control panel, sets GENERATOR POWER-ECS (ICC) switch to ON. (Red safety guard down).			a. Closes and secures the control panel access doors.
b. Sets PWR DIST UNIT PWR SPLY to ON. Observes POWER SUPPLY STATUS indicator is on.			
c. At generator control panel, sets VOLTAGE PHASE-to-NEUTRAL switch to PHASE A, PHASE B, and PHASE C. Observes the VOLTAGE PHASE-to-NEUTRAL meter to read 120 ±6 VAC for <u>each</u> position of the switch. Returns switch to PHASE A position.			
d. Notifies CM 2 that prime power is applied.	d. When notified by CM 1 that prime power is applied, shuts down ICC truck and drain air tanks. Removes slave cable		

WARNING

Do not block rapid shelter exit with open bay doors. Close doors immediately after task is completed.

14. Assists as required.	14. Assists as required.	14. Enters shelter. Initializes VHF radio per TM 11-5820-540-12.	
15. Performs power-up sequence.	15. Performs power up sequence.	15. Sets up the Lightweight Computer Unit (LCU) if equipped.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	a. At air conditioner panel, sets MODE SELECTOR SWITCH and TEMPERATURE CONTROL to desired position. Adjusts AISLE lights to desired level.		
b. If AMG power cables are connected, at A66, sets UHF AMS PWR AMPL circuit breaker to ON.	b. Assists CM 1.		
c. Holds and releases 28 VDC LAMP TEST; ensures all indicators come on and go off.	c. At ambient air control panel (A72), sets selector switch to NORMAL.		
16. Performs PE checkout and Purge procedures (if required.)	16. Performs PE checkout and purge procedures (if required.)	16. Performs AMG circuit checks. a. Establishes communications with the AMG per BTRY SOP. b. At distribution box, ensures UHF AMS PWR AMPL and UHF ANT CONTROL UNIT are on. c. At power supply A25; ensures UHF ANT CONT is on.	
17. Unstows chairs for manstations.	17. Retrieves publications and documentation required for initialization of ICC.	17. Performs antenna mast monitor panel checks. Note: Steps a through g must be performed before erecting AMG mast assemblies.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		a. At antenna mast monitor panel (A139), sets MAST SELECTOR to BOTH. Alarm will sound. Alarm indicator is on, and SWAY INDICATOR meter is in DANGER area. b. Sets MAST SELECTOR to OFF, and presses ALARM RESET. Alarm shuts off. c. Sets MAST SELECTOR to ROADSIDE and presses ALARM RESET. Alarm will sound. ALARM indicator is on and SWAY INDICATOR meter is in DANGER area. d. Sets MAST SELECTOR to CURBSIDE and presses ALARM RESET. Alarm will sound. ALARM indicator is on and SWAY INDICATOR meter is in DANGER area. e. Sets MAST SELECTOR to OFF. Presses ALARM RESET; alarm shuts off. f. At ANT CONT UNIT (A41) sets CB to ON. Observes AC and DC power, ANT STOW 1,2,3,4, indicators are on.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		g. Sets ANTENNA POSITION AMS HEADING pointer to actual magnetic heading recorded during AMG emplacement.	

WARNING

Wait until AMG crew notifies you that priority mast is erected, before proceeding.

h. At antenna mast monitor panel--

(1) Sets MAST SELECTOR to the priority mast setting (CURBSIDE or ROAD-SIDE).

(2) Ensures that alarm does not sound, that ALARM indicator is off, and that SWAY indicator is in SAFE zone.

(3) Repeats procedure for other mast.

Note: If alarm sounds, instructs AMG crew to retract mast and not to continue until wind hazard ceases.

WARNING

If CRT breaks or visible damage is seen on CRT (chips, scratches, or cracks), evacuate the ICC and notify the unit commander. Do not perform maintenance on damaged CRTs.

CREWMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

Note: Make hard copies of all tabs assembled and give to the TD after completing initialization. If normal indications do not occur during initialization, refer to TM 9-1425-602-12-1.

18. Loads initialization software (Manstation 1).

18. Retrieves and installs ODU software.

a. At the ODU, ensures I/O BUS PWR is set to ON.

18. Aligns AMG antennas per commo plan.

Note: AMG antennas correspond with UHF RRT groups, AMG antenna 1 with RRT 1, and so on.

CAUTION

Do not attempt to rotate ANTENNA POSITION-ANTENNA pointer past stop pointer. Antenna cannot be rotated through this area.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

Note: Make hard copies of all tabs assemble and give to the TD after completing initialization. If normal indications do not occur during initialization, refer to TM 9-1425-602-12-1.

CAUTION
If ICC disk is not securely installed, contents may become damaged or unusable during operations.

Note: The disk must be inserted with the disk side used (normally side A), facing shelter rear. The disk must not be in WRITE PROTECT.

b. Retrieves ICC disk and ensures disk is not in WRITE PROTECT.

c. Installs and secures ICC disk into ODS1.

CAUTION
Disk drive access doors must be closed and locked to ensure proper airflow.

d. Secures disk drive door. Verifies CARTRIDGE PRESENT indicator is green.

e. Retrieves, installs, and secures TRAINING or blank disk into ODS2. Secures disk drive door. Verifies CARTRIDGE PRESENT indicator is green.

f. Retrieves, installs, and secures data cartridge tape into EDR. Verifies TAPE PRESENT indicator is green. Notifies CM 1 that ODU and EDR are loaded

and operational.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

Note: Software starts and maintains TOD clocks. Disregard all indicators on A61 (BN STATUS INDICATOR PANEL) until TOD clock is running.

g. At BITE indicator panel, sets COMPUTER CONTROL PROGRAM SELECT switch to TACTICAL.

h. Ensures BASKET 2 POWER-MS1 GOOD is on.

i. Presses COMP & SYS RESET switch indicator.

i. At HCU, sets POWER switch to ON. Ensures POWER and ON LINE indicators are on.

j. Presses BOOTSTRAP INIT switch indicator.

19. Verifies the following switch indicators:

19. Observes for any BITE faults and console alerts.

19. Connects UHF AN/GRC-103 terminal into operation per TM.

a. CONSOLE MODE-CMND PLAN is on (white).

b. SITUATION DISPLAY SELECT-OFFSET/SCALE-FULL and CENTR are on.

c. ENGAGEMENT MODE-SEMI AUTO is on green.

d. SOURCE/ADDRESS SELECT-SOURCE push button is on.

e. Presses EQUIP CONTR for status monitor alert to be

observed during initialization.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

Note: CM 1 and CM 2 will work together to input tabular data and verify accuracy.

20. Performs initialization per FORSCOM Air Defense TSOP, TM 9-1430-602-10-1, and local directives.

20. Performs initialization per FORSCOM TSOP, TM 9-1430-602-10-1, and local directives.

20. Powers up and aligns priority UHF AN/GRC-103 radio.

a. At A66 power distribution panel, ensures the following are set to ON.

(1) NOT SECURE PWR-RRT 1, 2, and 3.

(2) RLRIU.

b. At A179 and A180, ensures communications cables are connected as specified in communications plan.

c. Energizes electronic key generator KG-94A, as described in TM 11-5810-365-10.

(1) Sets KG-94A ON/STBY/ZEROIZE-OFF switch to ON. (The UPDATE counter should read zero. The PWR ON and ALARM indicators come on).

(2) Sets function switch to LAMP TEST.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		(3) Presses and holds the ACTUATE push button. (All indicators come on and the UPDATE counter displays 88.) Releases the ACTUATE push button. (PWR ON and ALARM indicators stay on.) (4) Acquires the fill device to load current codes and secures code device. d. Sets radio transmitter and receiver to assigned channels. e. Aligns and operates radio transmitter/receiver per TM 11-5820-540-12, as follows: (1) Sets receiver AC POWER switch to ON. (2) Sets receiver meter switch to +12VDC and –12VDC (meter indicates in GREEN band). (3) Sets receiver meter switch to OSC, DOUBLR, and RCV SIG (meter indicates between 25 and 90 percent).	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		(4) Sets transmitter meter switch to DRIVER, then to PWR OUT. Adjusts transmitter tune control for each switch position (20 to 90 percent of full scale). (5) Sets transmitter meter switch to REFL PWR. Tunes SMTR DUPL control for minimum indication on scale. (6) Sets receiver meter switch to XMTR DUPL (meter indicates between 25 and 90 percent). (7) Sets receiver meter switch to REFl PWR (meter indicates less than 20 percent). (8) Sets receiver meter switch to MULT, adjusts MULT PEAK control for maximum meter indication between 25 and 90 percent. LOW SIGNAL lamp goes out. (9) Monitors the order wire circuit for quiet operation. (10) Sets receiver meter switch to OW. Pushes the RING button on the order wire unit (meter indicates in GREEN).	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		(11) Sets transmitter switch to 12 CH PCM. f. At antenna control unit, operates ROTATE CW-CCW switch as required or has crew members rotate UHF corner reflectors (if used), for maximum reading on radio receiver meter. 21. Voices communication system control panel operations.	

CAUTION

Ensure proper polarity is maintained when connecting cable ends, as shown on upper left side of patch panel.

		a. At OCU, verifies party lines and communications circuits are operational. b. Ensures IDOCS, RLRIU, and CLS circuits are configured per communications plan. c. Aligns antennas. Initializes RRTs per communications plan. d. At the CMP, ensures FRONT/REAR switch is set to FRONT.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
22. Stands by until tactical operations commence.	22. Notifies TD that ICC is initialized and ready to commence tactical operations.	22. Stands by until tactical operations commence.	22. Stands by until tactical operations commence.

ICC CREW DRILL READY-FOR-ACTION PROCEDURE

WARNING

Fratricide. Munitions cannot distinguish between friend and foe. All commanders, trainers, and leaders must plan, train, and stress all procedures, which must be followed to avoid fratricide. These procedures include IFF, weapons control status, vehicle and aircraft recognition, corridors, routes, zones, flight levels, and other control measures,

Note: Performance measures 25 through 31 are the necessary procedures for transitioning the battalion from initialization to ready-for-action status. These procedures provide broad guidance for ICC crew members and are written in general terms to allow for tactical situation input. The ready-for-action procedures rely on a properly emplaced and initialized ICC. The battalion ICC has been properly emplaced at the designated location, powered up, and initialized. Equipment manning requirements and tactical actions conform to the SOA to which ordered. Required equipment checks have been performed to attain the necessary readiness posture in the required time. When the emplacement crew is different from the tactical crew, or when one tactical crew is replaced with another, the replacement crew gets a complete system brief.

Note: Monitor display consoles and acknowledges and responds to alerts and messages.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
TACTICAL DIRECTOR'S ASSISTANT (TDA)	TACTICAL DIRECTOR (TD)	COMMUNICATIONS OPERATOR
23. Ensures that the ICC has been initialized and the operational software loaded.	23. Ensures that the ICC has been initialized and the operational software loaded.	23. Monitors UHF and VHF radios to ensure proper operation.
24. Selects switch indicators according to the TSOP.	24. Selects switch indicators according to the TSOP.	24. Monitors the LCU, CADCI/SMU AND JTIDS operations.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
TACTICAL DIRECTOR'S ASSISTANT (TDA)	TACTICAL DIRECTOR (TD)	COMMUNICATIONS OPERATOR
25. Enters data in tactical tabs according to the TSOP.	25. Enters data in tactical tabs according to the TSOP.	
26. Determines missile status by observing the battalion status tab, missile inventory tab, and tab battalion status panel.	26. Observes battalion status panel and ensures proper indications are displayed for the tactical situation.	
27. Observes BITE panel for abnormal indications.	27. Evaluates operational assessment tab.	
28. Ensures equipment requirements are met by observing the FP status tab.	28. Evaluates operational assessment tab.	
29. Reports to the TD (CM 2), "Ready for action."	29. Upon receipt of "Ready for action," reports from CMs 1 and 3. Reports to higher that the ICC is at Battle Stations (Blazing Skies).	29. Reports to the TD (CM 2), "Ready for action."

Note: For evaluation purpose time stops when one firing unit achieves minimum engagement.

COACHING POINT: The performance measures are done in the sequence outlined. All crew members do their like-numbered tasks at the same time. When all the individual tasks have been mastered and all crew members can do their jobs without coaching, go for speed and remember to be safety-conscious. The more the drill is performed, the better the crew members will perform together.

RUN-THROUGH INSTRUCTIONS: The crew members should practice this drill until they can perform the drill according to the standard without using the drill book. The initial run-through should be conducted slowly. The crew members should change positions in order to learn all steps and standards.

PERFORM: When the crew members can perform this crew drill to standard, inform the platoon sergeant or platoon leader that the crew members are ready to be evaluated.

SUPPORTED T&EOS

ARTEP NUMBER	T&EO NUMBER	T&EO TASK TITLE
44-635-MTP	44-4-9001	Emplace the Fire Distribution Center

2-3. Crew Drill 44-5-D006.

TASK: Emplace the CRG, AMG With EPU for Tactical Operations (44-5-D006).

CONDITIONS: The CRG, AMG, and EPU are in the march order configuration and a general location to emplace the system has been selected. All components of the ICC, AMG, and EPU are available and operable. A crew is assigned to emplace and prepare the system for tactical operations in all environmental conditions both day and night. As the crew approaches the selected position, the ground guide orients and positions the EPU and then the CRG, AMG to a designated spot and then commands, "Halt vehicle."

STANDARD: Emplace and prepare the CRG, AMG, and EPU for tactical operations by the performance measures as sequenced in this drill. Complete this drill within 45 minutes for the CRG, AMG, and the EPU when in a training environment.

Notes:

- Allow additional emplacement time when UHF communication corner reflectors and NBC protective entrance assembly A108 are to be installed.
- The time required to perform this drill in MOPP4 will increase per ARTEP 44-637-30-MTP, Figures 5-1 and 5-2.

SUPPORTING INDIVIDUAL TASKS: Supporting individual tasks for this drill are listed in Appendix A, Individual Task-To-Drill Matrix.

ILLUSTRATIONS: Figures 2-3 through 2-10.

SETUP INSTRUCTIONS: The following equipment, areas, and personnel must be provided for the drill to be trained correctly.

a. Resources. As a minimum, the following are required: One CRG, guided missile system truck-mounted; one AMG, communications, truck-mounted; two EPUs, generator (trailer-mounted); all with basic issue items.

b. Training Site. The potential site must be large enough (20x35 meters) to perform all operations of emplacement for the CRG, AMG, and EPUs. The site should be as level as possible, without any overhead obstacles or power lines. Maximum allowable slope for the AMG from front to back is 10 degrees and from side to side is 1/2 degree.

c. Unit Instructions. The crew members will emplace and prepare the CRG, AMG, and the EPUs for tactical operations at a designated location for each piece of equipment using the following procedures:

(1) Before the CRG, AMG, and EPUs arrive, the RSOP team will have decided the position of each vehicle.

(2) The RSOP team places marker stakes and ground rods to show communication relay section (CRS) vehicle positions.

(3) All CRS vehicles should arrive on site at approximately the same time and stop a short distance from the selected site.

(4) One crew member from each vehicle serves as a ground guide to direct the driver to position the vehicle at the emplacement site. Crew members will position the EPUs first, then CRG and the AMG last.

TALK THROUGH INSTRUCTIONS: The mission of the communications relay section equipment is to overcome terrain obstacles or extend the range of the communications network. The crew members must be able to emplace the equipment of the communications relay section and prepare it for tactical operations where directed within prescribed time limits.

a. Orientation. Before beginning drill training, ensure that each crew member knows the purpose of the drill and is briefed on safety awareness.

b. Safety/Fratricide. All soldiers that operate the CRG, AMG, and EPUs must know that safety hazards exist while operating the various items of equipment. These hazards can and have caused severe injuries to operators. Be extremely careful when working around the CRG, AMG, and EPUs. Throughout the crew drill, observe all dangers, warnings, and cautions required to properly emplace the CRG, AMG, and EPUs. All commanders, trainers, and leaders must plan, train, and stress all procedures, which must be followed to avoid fratricide. These procedures include IFF, weapons control status, vehicle and aircraft recognition, corridors, routes, zones, flight levels, and other control measures. Munitions cannot distinguish between friend and foe.

c. Demonstration (Optional). If nearby crew has successfully performed the drill, have that crew demonstrate the drill. Explain what is being done and why, using the performance measures as a guide. After the demonstration, summarize.

d. Explanation. Explain the drill in the following manner:

(1) Using a diagram, Figures 2-3 through 2-10, a sand table, or a simple sketch in the dirt, show the crew members how the CRG, AMG, and EPUs should be emplaced.

(2) Tell each crew member what their duties are in the drill.

(3) Read the performance measures of the drill to the crew.

(4) Have each crew member explain their performance measures to ensure that they understand them.

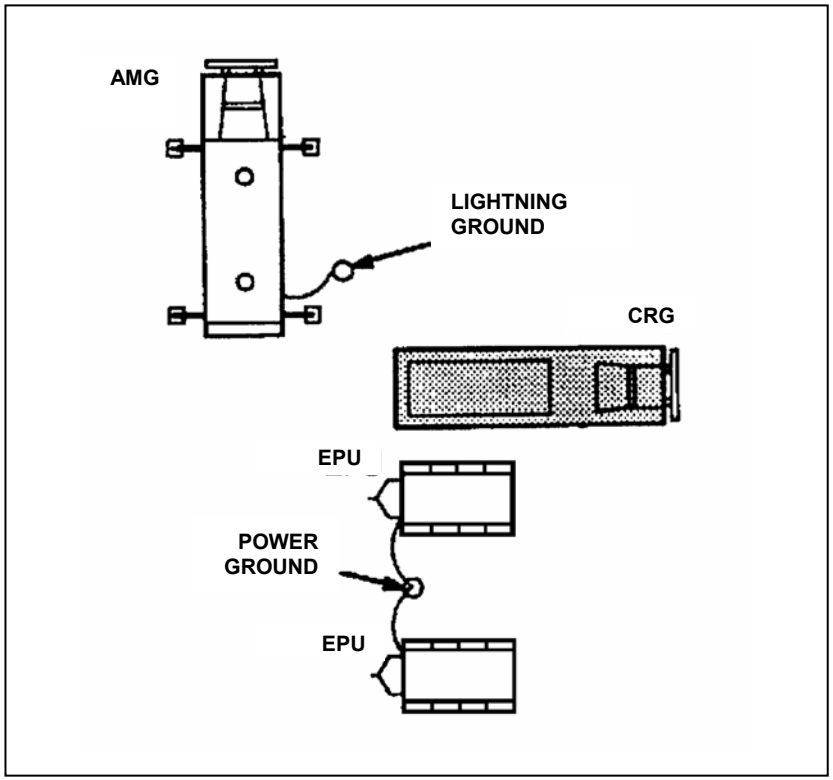

Figure 2-3. Emplacement CRG and AMG with EPUs

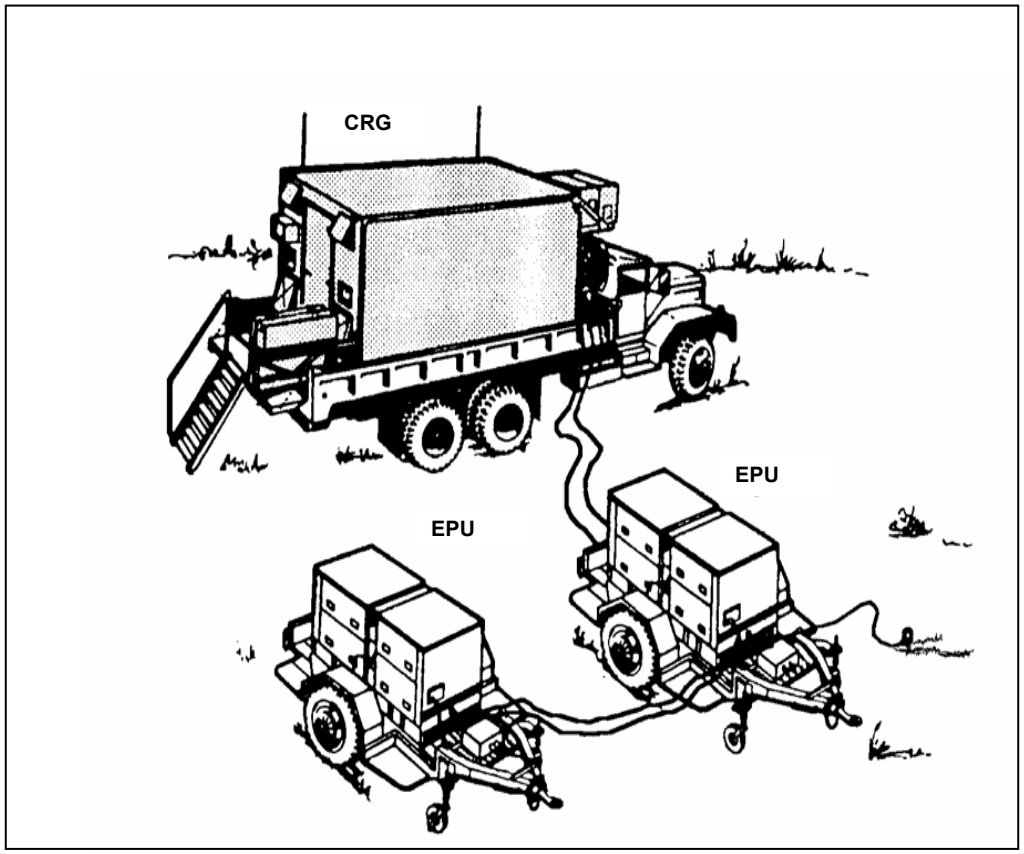

Figure 2-4. Emplaced CRG with EPUs

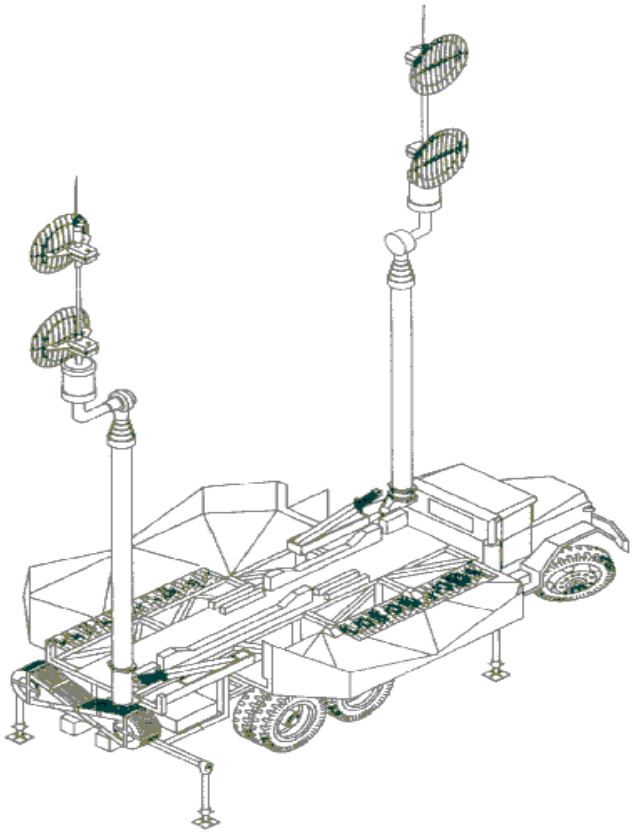

Figure 2-5. Emplaced AMG.

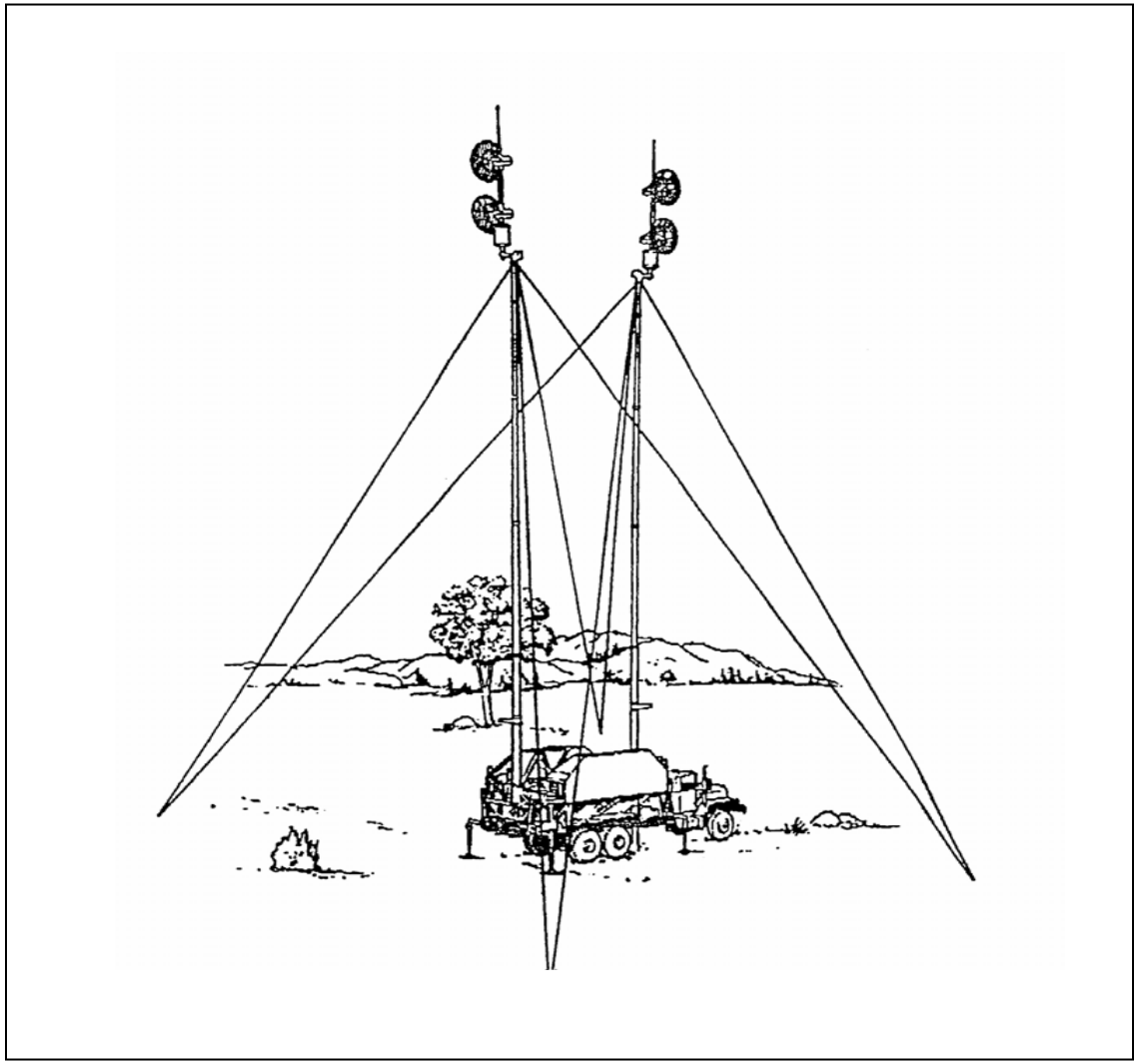

Figure 2-6. Emplaced AMG with guy wires installed

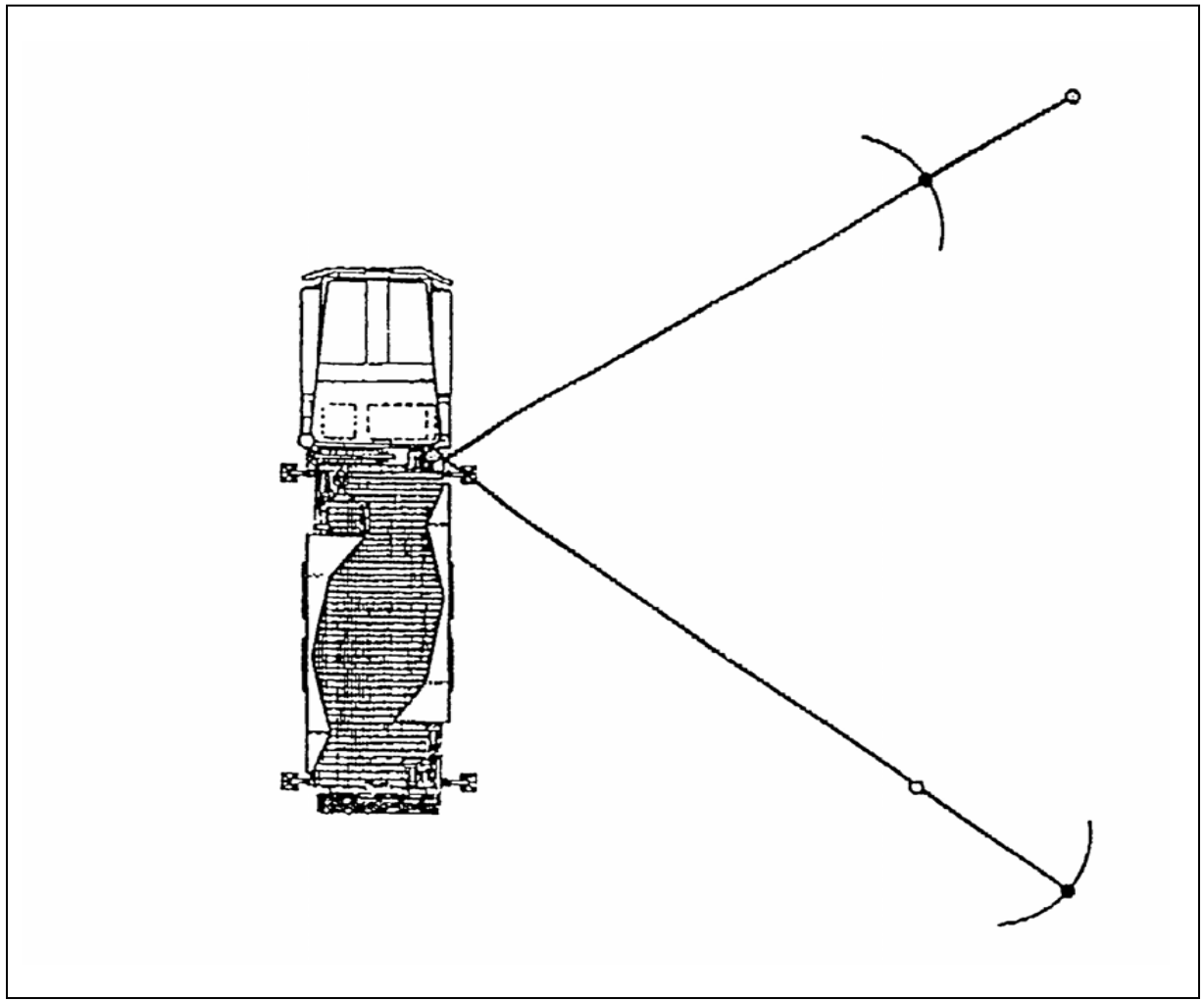

Figure 2-7. AMG scribe arc lines

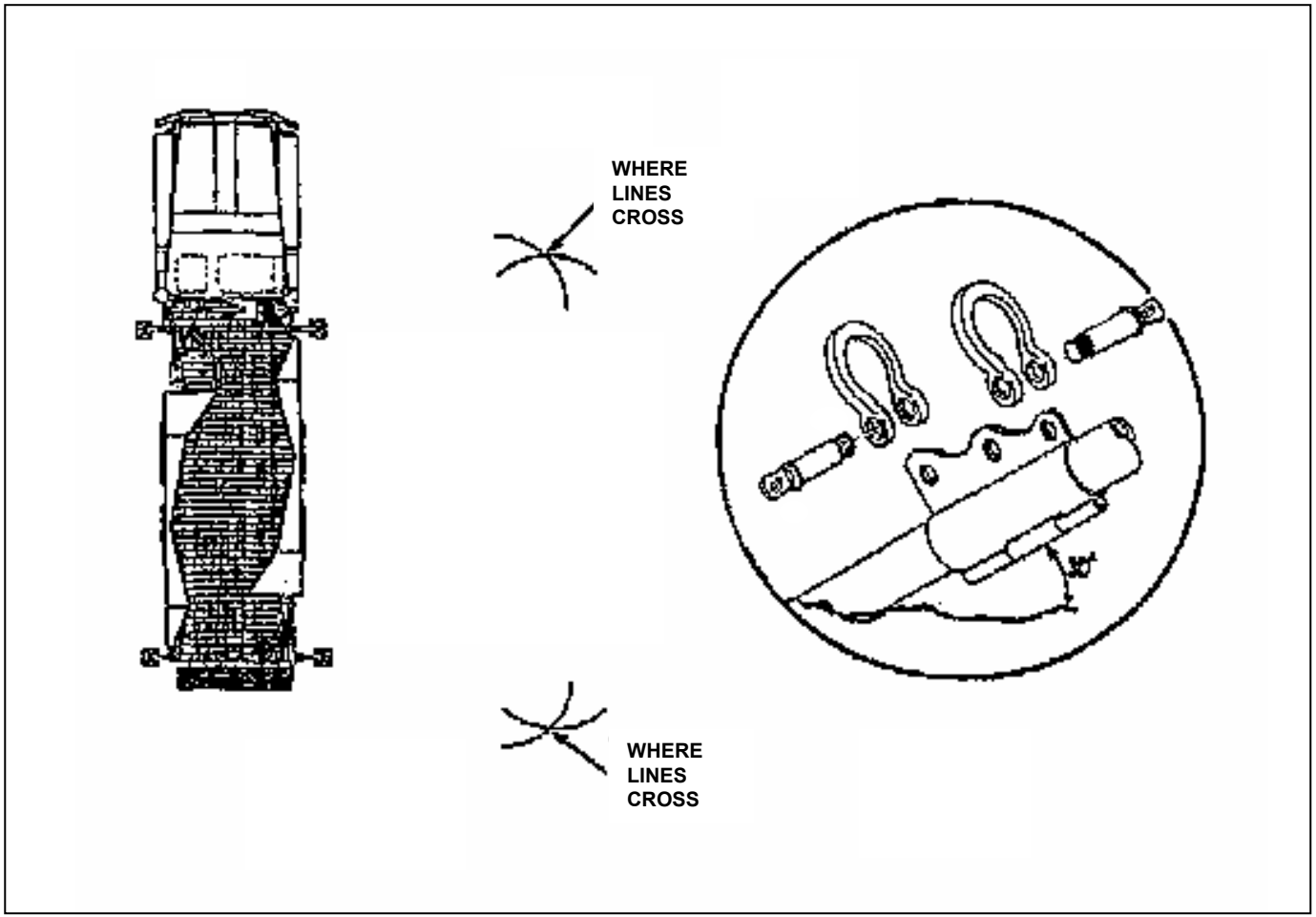

Figure 2-8. AMG--scribe arc lines cross and guy stake emplaced

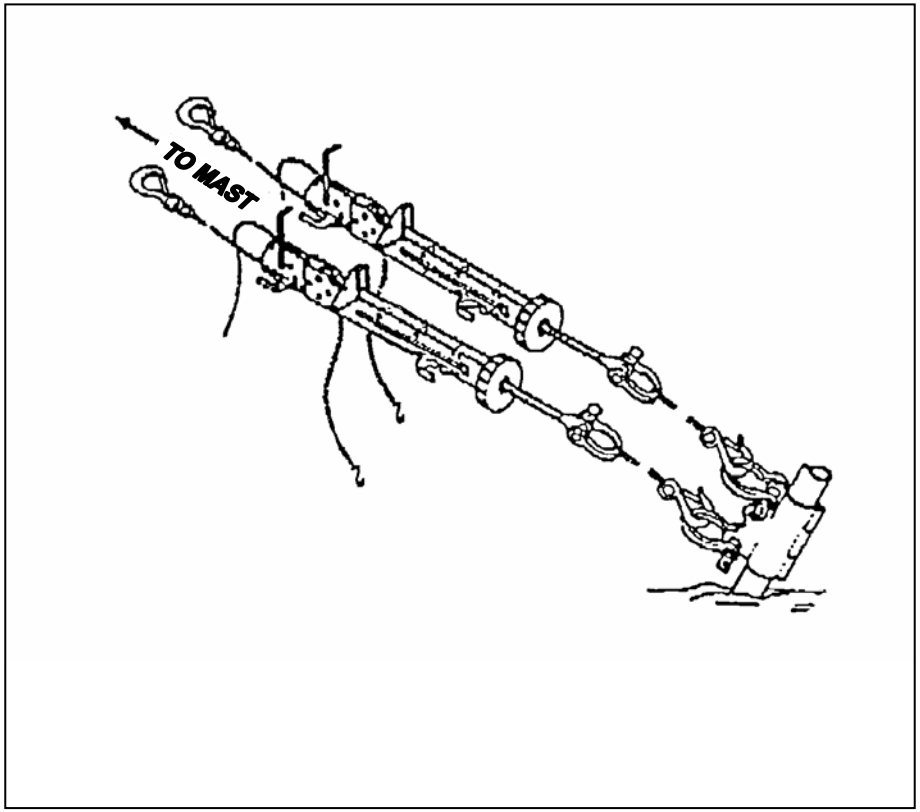

Figure 2-9. AMG--guy wire tensioners to stakes

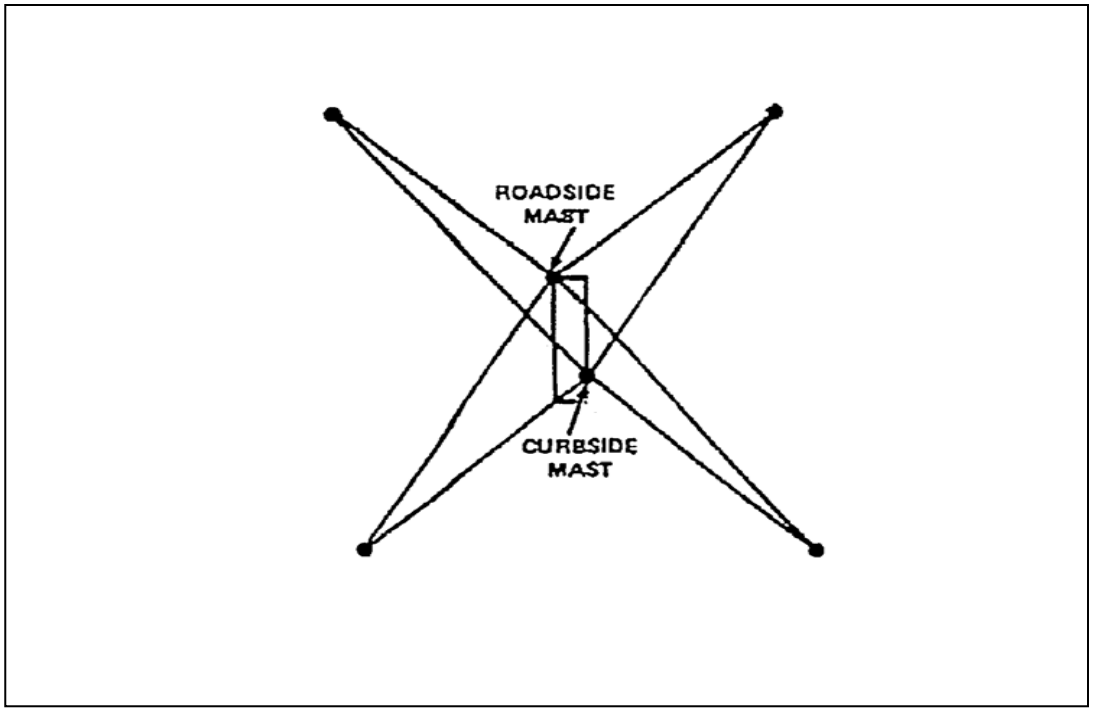

Figure 2-10. AMG--tension guy wire layout

WALK-THROUGH INSTRUCTIONS:

a. Use the Crawl-Walk-Run Method of Training. Have crew members take their positions and perform the drill. Start the training slowly. Correct any mistakes the crew members make as they go. Do not proceed until drill procedures are done correctly. After the crew members demonstrate their proficiency at a slow pace, let them do it faster. Remember however, that safety is never sacrificed for speed. Watch carefully to make sure the crew members achieve all of the standards for the drill.

b. Initiating Cue. As the CRG and AMG crews approach the selected position, the vehicle ground guides orient and position the EPUs and the AMG and CRG to a designated spot and command, "Halt vehicle."

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Before proceeding with this drill, read all Danger, Warning, and Caution notices.

WARNING

Periodically check the ground conditions around guy wire sakes. Wet soil can reduce the load capacity of the stakes.

WARNING

Ensure the area for the guy wire stakes is firm. Avoid traveled areas and road. Mark all guy wires clearly with warning flags.

WARNING

Post warning signs and rope off the area if ice forms on guy wires. Do not try to erect antennas during an electrical storm. Check guy wires and stakes daily, and immediately before and after bad weather.

CAUTION

If for any reason, a mast must be repositioned (raised or lowered) after guy wire tension is completed, release tension and then re-tension guy wires.

Notes:

- Emplacement of the communications relay section equipment requires coordination and communication between all crew members assigned to the communications relay section.
- The AMG and EPUs are emplaced simultaneously with the CRG. The CRG and AMG ground guides assist with the equipment emplacement.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
CREW MEMBER	DRIVER AMG/EPU	CREW CHIEF	DRIVER CRG/EPU

WARNING
Position the AMG so there are no overhead obstructions, especially power lines.

Note: For evaluation purposes time starts when first EPU is positioned over hub stake.

1. Directs and orients CM 2 to properly position the AMG with EPU to the designated marker stake.

a. Commands, "Halt vehicle." (Refer to Appendix B.)

1. Maneuvers the AMG truck to designated position and orients the EPU at its designated marker stake as directed by CM 1.

a. Halts vehicle and sets truck hand brake. Sets the shift lever to neutral and leaves the engine running.

1. Directs and orients CM 4 to properly position the CRG with EPU to the designated marker stake.

a. Commands, "Halt vehicle." (Refer to Appendix B.)

1. Maneuvers the CRG truck to a designated position and orients the EPU at its designated marker stake as directed by CM 3.

a. Halts vehicle and sets truck hand brake. Sets the shift lever to neutral and leaves the engine running.

DANGER
Do not get directly in front of or in back of the vehicle until the wheels are chocked.

2. Chocks vehicle and notifies CM 2 that truck and trailer are chocked.

3. Uncouples and emplaces EPU from AMG.

a. Emplaces fire extinguisher on C/S of EPU.

2. When notified by CM 1 that wheels are chocked, exits vehicle.

3. Uncouples and emplaces EPU from AMG.

2. Chocks vehicle and notifies CM 4 that truck and trailer are chocked.

3. Uncouples and emplaces EPU from CRG.

a. Emplaces fire extinguisher on C/S of EPU.

2. When notified by CM 3 that wheels are chocked, exits vehicle.

3. Uncouples and emplaces EPU from CRG.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
Note: AMG must be cross-leveled to within ½ degree. Pay close attention to crew chief's instructions.			
4. Directs and orients CM 2 to properly position the AMG truck to its designated marker stake. a. Commands, "Halt vehicle." (Refer to Appendix B.)	4. Maneuvers the AMG to its designated marker stake as directed by CM 1. a. Halts vehicle and sets truck hand brake. Sets the truck shift lever to neutral. Leaves the engine running.	4. Directs and orients CM 4 to properly position the CRG truck to its designated marker stake. a. Commands, "Halt vehicle." (Refer to Appendix B.)	4. Maneuvers the CRG to its designated marker stake as directed by CM 3. a. Halts vehicle and sets truck hand brake. Sets the truck shift lever to neutral. Leaves the engine running.
5. Chocks vehicle and notifies CM 2 when complete.	5. When notified by CM 1 that truck wheels are chocked, exits vehicle.	5. Chocks vehicle and notifies CM 4 when complete.	5. When notified by CM 3 that truck wheels are chocked, exits vehicle.
Note: CMs will install ground rods if ground rods are not already emplaced.			
6. Assists other CMs to ensure ground is connected at the AMG, CRG, and EPUs. a. Unstows two VHF whip antennas roadside.	6. Grounds AMG.	6. Grounds the CRG.	6. Grounds the EPUs.

WARNING

To avoid injuring personnel or damaging equipment ensure there are no overhead hazards or power lines, before releasing VHF antennas. If corner reflectors are to be installed, do not fully release lanyards. Whip antennas may interfere with corner reflectors.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

Remove fire extinguishers from power units before generators are placed in operation.

b. Places fire extinguishers from EPUs on the ground halfway between the two power units.

Notes: The primary EPU will be connected to the CRG and the backup EPU will be connected to the primary EPU. If EPU power and control cables are stowed on the EPUs, the cable connecting procedures will be in reverse.

CAUTION

Filters can ice at temperatures at or below 32 degrees Fahrenheit. In freezing conditions, set the handles on the water intrusion duct to winter position to recirculate air within the ambient air-cooling system. During emplacement, check the filters for icing.

CAUTION

If the water intrusion mod is not present, check filters for icing; remove if necessary, and replace with clean dry filter. If freezing conditions develop during operations, inspect filters periodically until conditions improve.

Note: For this procedure, the EPU power control cables are stowed in front of the CRG shelter truck bed.

7. Emplaces AMG/CRG.	7. Emplaces EPU/CRG.	7. Emplaces AMG/CRG.	7. Emplaces EPU/CRG.

WARNING

Truck tailgate and boarding ladder are heavy. To avoid injury, two crew members are required to lower the tailgate and carry the ladder.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
a. Assisted by CM 3, lowers CRG tailgate and installs the boarding ladder. Positions and secures boarding ladder in center of tailgate.	a. Retrieves and connects EPU power and control cables to the primary EPU.	a. Assists CM 1. Lowers the CRG tailgate and installs the boarding ladder.	a. Retrieves and connects EPU power and control cables to the primary EPU.

CAUTION

To prevent damage to equipment, air conditioner cover must be opened when air conditioner is in cooling mode.

Note: Air conditioner cover need not be opened when outside temperature is 40 degrees or below and only heater is used.

b. Retrieves and connects AMG and CRG power and control cables and opens air conditioner cover (if required).	b. Assists CM 4.	b. Assists CM 1.	
c. Retrieves and connects AMG/CRG RF cables.	c. Assists CM 4.	c. Assists CM 1.	
d. Releases and swings PE storage rack away from shelter door and secure. Unlocks shelter and secures shelter lock.	d. Assists as required	d. Assists as required.	d. Obtains and uncoils the generator parallel cable and connects between generators.
e. Opens inlet-outlet air vents on rear of shelter.	e. Assists as required	e. Assists CM 1 open the inlet-outlet vents on the rear of the shelter.	e. Removes parallel receptacle-shorting plug and connects the EPU parallel cable between the EPUs.

Note: If Protective Entrance A108 is used, refer to Appendix C for installation procedures.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
8. Assists CMs 2 and 3 and installs the PE (if used).	8. Assists CMs 1 and 3 and installs the PE (if used).	8. Assists CMs 1 and 2 and installs the PE (if used).	
9. Employs roadside stabilizing struts.	9. Determines and records the magnetic azimuth heading of the AMG.	9. Employs curbside stabilizing struts.	9. Prepares CRG switches for operation per TM.

DANGER

Shock and electrocution hazards exist. Do not start generator until all CRG, AMG, and EPU cables are connected. Never attempt to start the generator set if it is not properly grounded. Failure to observe this warning may result in serious injury or death by electrocution.

a. Ensures indicator guide is aligned for the appropriate soil condition.	a. Removes sound-powered telephone from storage and goes to roadside distribution box (if used).	a. Ensures indicator guide is aligned for the appropriate soil condition.	a. Prepares primary generator for use.
	b. Opens cover and connects telephone. Turns on mast warning lights, if needed.		b. Performs before-operation PMCS per Appendix G.
	c. Ensures amplifier POWER DRIVER and FINAL switches for each antenna are OFF.		c. Ensures fuel selector value handle is set at desired position.
	d. Places MAST WARNING LIGHTS to OFF for blackout conditions or to ON for normal operation.		d. Closes all access doors, except air vent and control cubicle doors. Locks air vent doors in the open position.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	e. Adjusts the LAMP CONTROL switch to DIM for blackout operation or to BRIGHT for daytime operation.		e. Ensures the generator power switch is set to OFF position before power up.

CAUTION
Use hearing protection before starting generator. Failure to do so may cause hearing loss.

10. Repeats step 9 for the other roadside strut.	10. Repeats step 9 for the other curbside strut.	10. Checks out and sets up switches for the primary generator set per TM 5-6115-465-12. a. Sets controls and verifies indicators: (1) DC circuit breaker to CLOSED position (pushed in). (2) START-RUN-STOP switch to RUN. (3) BATTLE SHORT switch to ON. (Safety guard up). (Fuel transfer pump will make clicking sound when transferring fuel into day tank.)

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			b. When day tank is full (about 2 minutes) and clicking sound stops, sets the BATTLE SHORT switch to OFF (safety guard down).
11. Employs antenna protective covers.	11. Checks air tanks.	11. Employs antenna protective covers.	11. Powers up the primary generator set.

Note: Compressor air flaps should be open and dc power should be applied during road march to new emplacement site.

	a. Checks air flaps are open.		a. Holds START-RUN-STOP switch to START until OIL PRESSURE gauge indicates oil pressure, and VOLTS AC meter indicates voltage.

Notes: If your mast group has a safety chain between rear handrails, unhook chain. Hook chain back after masts are raised.

- Ensure that the air vent plug is opened about ½ turn, before lowering covers. Do not remove plug after covers are down. Place control valve lever to hold.

	b. Opens MAST CONTROL doors.		b. When the engine starts, sets the START-RUN-STOP switch to RUN.

Note: At the fault indicator panel, UNDER VOLT, LOW OIL PRESS, and UNDER FREQ lights will go on.

	(1) Verifies MAST EXTENSION switch is set to IN.		

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

Notes: If the engine fails to start within 15 seconds, release the START-RUN-STOP switch. Allow the cranking motor to cool at least 3 minutes, and then repeat steps. If the engine fails to start after injecting ether three times, cease operation and notify engineer maintenance.

(2) Places COMPRESSOR MODE switch to AC/AUTO.

(3) Verifies DC MODE switch is set to ON.

c. Verifies generator frequency and voltages are correct, adjusts as required.

CAUTION

If any generator set fault lights come on, stop the generator set and correct the indicated fault(s), before proceeding with operation.

CAUTION

Turning power on to the CRG when it is not ready may result in overload and damage equipment.

WARNING

To avoid damage to equipment or injury to personnel ensure there are no overhead obstructions before releasing VHF antennas.

WARNING

Warn personnel on the ground, before lowering each antenna protective cover.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING
Do not unscrew T-Handle. Mast clamp can fall from mast and injure personnel.

12. Unclamps roadside mast clamp by unscrewing the two captive bolts to release it.	12. Repeats step 5 for other side of vehicle.	12. Unclamps curbside mast clamp by unscrewing the two captive bolts to release it.	12. Applies power to CRG after ensuring CRG is ready for prime power. a. Sets output CKT BRK CLOSE/OPEN switch to CLOSE position, CKT BRK light comes on. b. Observes all generator instruments for normal readings.
13. Employs antenna feedhorns on priority selected antenna mast.	13. Unstows guy wire accessories from curbside forward storage (if used).	13. Assists CM 1 in employing feedhorns on priority selected antenna mast.	13. Goes to CRG and applies power.

Note: At generator control panel, ensure one GENERATOR-ON-LINE indicator is on before continuing.

WARNING
Use extreme care not to pinch fingers during feedhorn deployment

a. At generator control panel A64, sets GENERATOR POWER-ECS (CRG) switch to ON (red safety guard down).

b. At jack box A97 connects sound-powered telephone (if used) and establishes communications with AMG.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			c. Notifies CM 2 ac power is on. Confirms all amplifier switches at amplifier distribution box are OFF.

WARNING
Feedhorns are fragile. Handle with extreme care.

Note: Connecting, observing, staking, and tensioning guy wires applies only to AMGs with guy wire accessories.

14. Sets antenna polarization on priority mast according to the multi-channel commo plan.	14. Assists as needed.	14. Assists CM 1.	14. Verifies CRG prime power. a. At distribution box (A66), verifies the following are on: (1) LIGHT CONTROL. (2) AIR CONDITIONER CURBSIDE. b. At A69, ensures RUN INDICATOR light is on. c. At A71 ensures NORMAL, OFF, MAINTENANCE is set to NORMAL. d. At air conditioner panel; sets MODE SELECTION SWITCH to desired position, sets TEMPERATURE CONTROL. e. Adjusts AISLE lights to desired level.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			f. Opens shelter door, observes AISLE lights go off. Closes door.
15. Sets antenna elevation angle on priority mast according to the multi-channel commo plan.		15. Assists CM 1 in adjusting antenna elevation angle on priority mast.	15. After verification of prime power, shuts down vehicle (CRG) and drains air tank.

CAUTION

Do not open cover until mast is raised. Otherwise cover will not clear mast clamp.

16. Opens roadside cable tray.	16. Prepares to raise priority mast; goes to priority mast control panel and opens. a. Verifies MAST EXTENSION switch is set to IN.	16. Opens curbside cable tray.	16. Performs power-up sequence. a. At distribution box (A66), sets the following: (1) PWR DIST UNIT PWR SUPPLY to ON. (2) At generator control panel, sets VOLTAGE PHASE to NEUTRAL SWITCH to PHASE A, PHASE B, and PHASE C. Observes that the VOLTAGE PHASE to NEUTRAL METER reads 120 $\pm$ 6 vac for each position. Returns switch to PHASE A position.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	b. Sets COMPRESSOR MODE switch to AC/AUTO. BOTH, if quick charge is necessary and AC power is available.		b. At ambient air control panel (A72), sets selector switch to NORMAL. (1) Ensures all indicators except 28 VDC are off. (2) Holds LAMP TEST up; ensures all indicators are on. Releases LAMP TEST
	c. Verifies DC MODE switch is set to ON.		c. At power supply (A25), verifies the following circuit breakers are on: (1) UHF ANT CONT. (2) AN/VRC-92A A87
	d. Sets HYDRAULIC PUMP MODE switch to AC, DC if AC power is not available.		d. At A66, sets COMMO PWR SPLY to ON. POWER SUPPLY STATUS indicators are off.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

e. At A66, sets following CBs to ON:

(1) NOT SECURE PWR-RRT 1, 2, 3, and 4.

(2) LCU.

(3) CADCI.

(4) IDOCS.

(5) OCU CONTROL PANEL PWR SPLY.

(6) RLRIU.

(7) MODEMS.

(8) BSC MSE.

(9) UHF ANT CONTROL UNIT.

f. Ensures GAS FILTER UNIT is set to OFF unless it is in a CBR environment.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			g. Holds and releases 28 VDC LAMP TEST; ensures all indicators come on and go off.

Note: Switch HYDRAULIC PUMP MODE switch to AC as soon as ac power is available.

WARNING

Mast travel path must be clear of personnel. Ensure travel path is clear of personnel and obstructions.

17. Erects priority mast.	17. Erects priority mast.	17. Erects priority mast.	17. At air conditioner panel, sets the MODE SELECTOR SWITCH and TEMPERATURE CONTROL to desired position.

Note: If adverse weather conditions are expected the ice shields and or height limiter on antenna masts must be deployed on antenna masts. Refer to TM 11-5985-368-12&P.

a. Adjusts mast height limiter cable according to the multi-channel communications plan. (Base plus two if plan calls for base for first mast).			
b. Notifies CM 2 to raise mast until antenna is positioned about 1 foot above handrail.	b. When notified by CM 1, holds MAST ERECTION switch in RAISE position.		
c. Stands clear and observes mast. Notifies CM 2 to stop mast movement if there are any problems or obstructions.		c. Stands clear and observes mast. Notifies CM 2 to stop mast movement if there are any problems or obstructions.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
d. Notifies CM 2 to stop when mast is 1 foot above handrail.	d. Stops when notified by CM 1.	d. Observes for hazards.	
e. Assisted by CM 3, unfastens and removes the amplifier cover.		e. Assists CM 1 to remove amplifier cover.	
18. Unfolds priority mast.		18. Unfolds priority mast.	18. Initializes VHF radio per OPERATOR MANUAL.
a. Notifies CM 3 to unfold mast. Observes antennas. Notifies CM 3 to stop unfolding antennas if there are any obstructions.			
b. Secures upper mast section.			

Note: Skip steps 19 and 20 if guy wires will not be installed.

WARNING
Guy wires can injure hands. Use gloves when handling.

19. Connects guy wires to priority mast.	19. Prepares guy wires for use.	19. Assists CM 1 in connecting guy wires.	19. If necessary, makes communications check with required stations.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	20. Lays each guy wire on the ground uncoiling guy wire from tensioners as you go.		
21. Raises priority mast to vertical.	21. Raises priority mast to vertical.	21. Raises priority mast to vertical.	21. Performs antenna mast monitor checks.
a. Notifies CM 2 it is clear to raise mast to vertical. Guides cables out of tray.	a. When notified by CM 1, holds MAST ERECTION switch to RAISE on the priority mast control panel until ball of mast inclinometer is centered in green position.	a. Assists CM 1 in guiding cables out of tray.	a. At antenna control unit (A41), sets POWER switch to ON. Observes AC and DC power ON indicators are on.
b. Observes cables, guy wires, and mast. Notifies CM 2 to stop raising the mast if either cables or guy wires become entangled.		b. Observes cables, guy wires, and mast. Notifies CM 2 to stop raising mast if either cables or guy wires become entangled.	b. At antenna mast monitor panel (A139), sets MAST SELECTOR to BOTH. Alarm will sound, ALARM indicator is on, and SWAY INDICATOR meter is in the DANGER area.
c. Removes lock strut from its storage position.	c. Reports to the CRG that priority mast is vertical and antennas are ready for rotation.		c. Sets MAST SELECTOR to OFF and presses ALARM RESET. Alarm shuts off and ALARM indicator is on.

Notes:

- The next step has to be coordinated with the crew. It is done after power is applied and the AMG crew is ready.
- Steps 21a through 21i must be performed before erecting AMG mast assemblies.
- Release enough cable so tensioners will not drag on the ground when masts are extended.
- Check with CRG and find out if ac power is available. If ac power <u>is</u> available, proceed to step 15 to raise and extend priority mast. If ac power is <u>not</u> available, repeat steps 7 through 12 for the other antenna mast and steps 13 and 14 for guy wire installation.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

Mast travel path must be clear of personnel. Ensure travel path is clear of personnel and obstructions.

WARNING

Stand away from mast. Wait until CM 2 has raised mast assembly, before starting next step.

d. Fastens lock strut on pin with quick-release pin.	d. Assists as required.	d. Assists as required.	d. Sets MAST SELECTION to ROADSIDE, and presses ALARM RESET. Alarm will sound, and ALARM indicator is on. e. Ensures SWAY INDICATOR meter is in DANGER area. f. Sets MAST SELECTOR to CURBSIDE and presses ALARM RESET. Alarm will sound, and ALARM indicator is on. g. Ensures SWAY INDICATOR meter is in DANGER area. h. Sets MAST SELECTOR to OFF. Presses ALARM RESET; alarm shuts off. i. At antenna control unit, ensures ANTENNA STOW indicators 1, 2, 3, and 4 are on. j. Notifies AMG crew to

erect priority mast.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

k. At antenna control panel, sets ANTENNA POSITION-AMS HEADING pointer to actual magnetic heading reported by AMG CM 2.

l. Sets ANTENNA SELECT switch to BITE and verifies ANTENNA and AMS HEADING pointers are aligned.

Note**:** Depending on mast selected, CMs 1 and 3 will perform steps accordingly.

WARNING

Wait <u>until</u> AMG crew notifies you the priority mast is erected, <u>before</u> performing step m.

m. At antenna mast monitor panel, sets MAST SELECTOR to the priority mast setting (CURBSIDE or ROADSIDE). Ensures alarm does not sound, ALARM indicator is off, and SWAY INDICATOR is in SAFE zone.

Notes:

- If alarm sounds, instruct AMG crew to retract mast and not continue until wind hazard ceases.
- Wait until CM1 has engaged lock strut before starting next step.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING
Keep lock strut installed at all times when mast is vertical.

Note: If variable height limiter is being used for height limitation of mast group, set ratchet lever to UP.

CAUTION
Do not operate MAST ERECTION switch with lock strut installed.

22. Extends priority mast. a. Notifies CM 2 to extend the mast.	22. Extends priority mast. a. When notified by CM 1, holds MAST EXTENSION switch to OUT. Extends mast a minimum of base plus 2.	22. Extends priority mast. a. Guides cables out of tray.	22. Assists as needed.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
b. Stands by and observes cables, guy wires, and mast.	b. When mast has fully extended, leaves MAST EXTENSION switch in the OUT position.	b. Notifies CM 2 to stop mast extension if either cables or guy wires become entangled.	

Notes:

- Ensure no one steps in any loop of the guy wires
- If mast is to stay at base, leave MAST EXTENSION switch in the PAUSE position.

	c. After second mast is erected, sets mast height according to the multi-channel communications plan.	c. Closes cable tray covers when mast is extended to prescribed height.	

Note**:** Sets amplifier operational mode according to the multi-channel communications plan.

	d. At the amplifier distribution box for the mast just raised, sets the POWER ON/OFF, MODE DRIVER ON/OFF, and MODE FINAL ON/OFF switches to ON or OFF per communications plan.		

Notes**:**

- Priority mast must remain at base plus 2 until the second mast has been erected to the vertical position
- If second mast has not been erected by this time, repeat steps 14 through 22.

CAUTION

When raising a mast, take care that the antennas of one mast are not entangled in the cables of the other mast.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

CAUTION

Do not raise the second mast until the priority mast is extended. The antenna on one mast may not clear the antenna on the other mast.

23. Repeats steps 14 through 22 to raise and extend the second mast.	23. Repeats steps 13 and 14 to raise and extend the second mast.	23. Repeats steps 13 and 14 to raise and extend the second mast.	23. Assists as needed.
24. Closes roadside cable storage tray covers when masts are extended to prescribed height.	24. Assists as needed.	24. Closes curbside cable storage tray covers when masts are extended to prescribed height. Connects chain to rear handrails.	
	a. Notifies CRG both masts are erected and extended.		
	b. Notifies CRG to set the MAST SELECTOR switch to BOTH on antenna mast monitor panel.		
25. Raises antenna protective covers.	25. Notifies ECS or ICC that AMG guy wire installation is about to begin.	25. Raises antenna protective covers.	25. Assists as needed.
a. Places control valve to HOLD. Pushes pump handle down and secure. Closes air vent plug.	a. Uncoils radius rope toward curbside or roadside front of the AMG, and pulls tight.	a. Places control valve to HOLD. Pushes pump handle down and secure. Closes air vent plug.	
26. Dismounts AMG platform and shuts off truck engine.		26. Dismounts AMG platform.	26. Assists as needed.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

Notes:

- Skip steps 27 through 32 if guy wires will not be installed.
- Place stake through the radius rope rings to scribe arc lines.

27. Assists CM 2 in scribing arc lines.	27. Scribes arc lines. (See Figure 2-8). a. At curbside or roadside front of AMG, swings radius rope in an arc and clearly scribes a line on the ground, using the radius rope red ring. b. At curbside or roadside rear of AMG, swings radius rope in an arc and clearly scribes a line on the ground, using the radius rope white ring. c. Disconnects radius rope from curbside or roadside front lift eye, and attaches to the curbside or roadside rear lift eye. Pulls rope tight. d. Scribes two arc lines on the ground as in steps a and b above, only this time, uses the radius rope white ring at the front of the AMG, and the red ring at the rear of the AMG.	27. Assists CM 2 in scribing arc lines.	27. Assists as needed.

Note: Where the arc lines cross, drive a stake into the ground for guy wire installation.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
28. Drives guy wire stake into the ground. (See Figure 2-9). a. Uses a sledgehammer and drives a stake into the ground where the arc lines cross. (Angle stake slightly away from AMG, about 30 degrees from the ground). b. Clamps stake attachment, using a shackle and pin through upper and lower of three holes.	28. Repeats step 27 to scribe arc lines for the other side.	28. Assists CM 1 with guy wire stakes or assists CM 2 in scribing arc lines.	28. Assists as needed.

WARNING
Guy wires can injure hands. Use gloves when handling.

Note**:** Attach hooks of two tensioners to each stake. Each guy stake will have two guy wires attached to it (one guy wire from each mast).

29. Repeats step 28 for remaining stake locations.	29. Hooks guy wire tensioners to stakes. (See Figure 2-9). a. Uncoils guy wire from tensioners, and turns adjusting nut to extend threaded rod completely. b. Hooks tensioners to guy stake.	29. Assists CM 1 with guy wire stakes.	29. Assists as needed.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	c. Pulls tensioners trigger back to release lock handle; pulls lock handle up to release guy wire. d. Pulls guy wire slack through tensioner, pushes lock handle down to secure guy wire, and releases tensioner trigger to lock.		

Notes:

- Ensure guy wires are not crossed. If two guy wires are crossed, unhook tensioner and guy wires around each other to uncross them.
- After tensioning a guy wire, the next guy wire to be tensioned is diagonally across from the tensioned guy wire on the same mast.

30. Tensions guy wire. (See Figure 2-10). a. Prepares the tensiometer; selects a riser marked 2C and places on tensiometer pin. b. Pulls tensiometer trigger to open, and places tensiometer on guy wire.	30. Repeats step 29 until all guy wire tensioners are hooked to stakes.	30. Assists CM 1 with guy wire tension.	30. Assists as needed.

CAUTION

Do not allow the tensionmeter pointer to go beyond the 100 mark on the dial. When applying the tensionmeter to a guy wire, close the trigger slowly and watch the pointer to ensure it does not go over the 100 mark.

c. Slowly closes tensiometer trigger.			c. Observes the mast and ensures it does not bend while tensioning guy wires.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
d. Notifies CM 3 to adjust the tensioner.		d. When notified by CM 1, adjusts the adjustment nut on the tensioner slowly to increase guy wire tension.	
e. Observes tensiometer dial; notifies CM 3 to stop when the dial indicates 22 (110 pounds).		e. Stops adjusting tensiometer when notified by CM 1.	
f. Pulls tensiometer trigger to open and remove tensiometer from guy wire.			
g. Flips tensiometer lever to place pointer to zero.			
h. Repeats step 22 until all guy wires are checked for tension.			
31. Rechecks all guy wires again for proper tension.		31. Assists CM 1 with guy wire tension.	
	32. Unhooks and coils radius rope; places in stowage bag and stow bag.	32. Coils any excess guy wire, and secures with chain to tensioner.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	33. Notifies ECS or ICC that guy wire installation and AMG emplacement are complete. Closes and secures amplifier distribution boxes.		

Notes:

- If PE was installed, perform Check Out and Purge procedures per Appendix C, steps 17 through 32. If time permits, continue with PE shelter purging.
- Perform during-operation PMCS for the AMG .
- Resume tactical operations per communications plan and local directives.

COACHING POINT: The performance measures are done in the sequence outlined. All crew members do their like-numbered tasks at the same time. When all the individual tasks have been mastered and all crew members can do their jobs without coaching, go for speed and remember to be safety-conscious. The more the drill is performed, the better the crew members will perform together.

RUN-THROUGH INSTRUCTIONS: The crew members should practice this drill until they can perform the drill according to the standard without using the drill book. The initial run-through should be conducted slowly. The crew members should change positions in order to learn all steps and standards.

PERFORM: When the crew members can perform this crew drill to standard, inform the platoon sergeant or platoon leader that the crew members are ready to be evaluated.

SUPPORTED T&EOS

ARTEP NUMBER	T&EO NUMBER	T&EO TASK TITLE
44-635-MTP	44-4-9051	Provide Multichannel Communications for the ICC

2-4. Crew Drill 44-5-D007.

TASK: Prepare the ICC With EPU for Road March (44-5-D007).

CONDITIONS: The ICC and EPU are emplaced and the battalion is ordered to a new field position. All components of the ICC and EPU are available and operable. A crew has been assigned to march order the system in all environmental conditions both day and night. The crew receives the command, "March order."

STANDARD: March order the ICC and EPU per the performance measures as sequenced in this drill. Complete this drill within 60 minutes for the ICC and the EPU when in a training environment.

Notes:

- Allow additional march order time when UHF communication corner reflectors and NBC protective entrance assembly A108 are to be removed.
- The time required to perform this drill in MOPP4 will increase per ARTEP 44-637-30-MTP, Figures 5-1 and 5-2.

SUPPORTING INDIVIDUAL TASKS: Supporting individual tasks for these drills are listed in Appendix A, Individual Task-to-Drill Matrix.

ILLUSTRATIONS: Figure 2-11.

SETUP INSTRUCTIONS: The following equipment, areas, and personnel must be provided for the drill to be trained correctly.

a. Resources. As a minimum, the following are required: One ICC (truck-mounted), and one EPU (trailer mounted), both with basic issue items.

b. Training Site. The emplaced ICC is in an area large enough (10x10 meters) to perform all operations for march order. The emplaced EPU is in an area large enough (5x5 meters) to perform all operations for march order. The site should be as level as possible. The maximum allowable slope from front to back or side to side is 10 degrees.

c. Unit Instructions. The crew members must march order the ICC and EPU.

TALK-THROUGH INSTRUCTIONS: The battalion has received a movement order to a new field position. Crew members have the responsibility to prepare the ICC and EPU for road march within the prescribed time limits.

a. Orientation: Before beginning drill training, ensure that each crew member knows the purpose of the drill and is briefed on safety awareness.

b. Safety/Fratricide: All soldiers who operate the ICC and EPU must know that safety hazards exist while operating the various items of equipment. These hazards can and have caused severe injuries to operators. Be extremely careful when working around the ICC and EPU. Throughout the crew drill, observe all dangers, warnings, and cautions required to properly emplace the ICC and EPU. All commanders, trainers, and leaders must plan, train, and stress all procedures that must be followed to avoid fratricide. These procedures include IFF, weapons control status, vehicle and aircraft recognition, corridors, routes, zones, flight levels, and other control measures. Munitions cannot distinguish between friend and foe.

c. Demonstration (optional): If nearby crew has successfully performed the drill, have that crew demonstrate the drill. Explain their actions using the performance measures as a guide. After the demonstration, summarize.

d. Explanation: Explain the drill in the following manner:

(1) Using a diagram, Figure 2-11, a sand table, or a simple sketch in the dirt, show the crew members how the ICC and EPU should be march ordered.

(2) Tell crew members what their duties are in the drill.

(3) Read the performance measures of the drill to the crew members.

(4) Have each crew member explain their performance measures to ensure that they understand them.

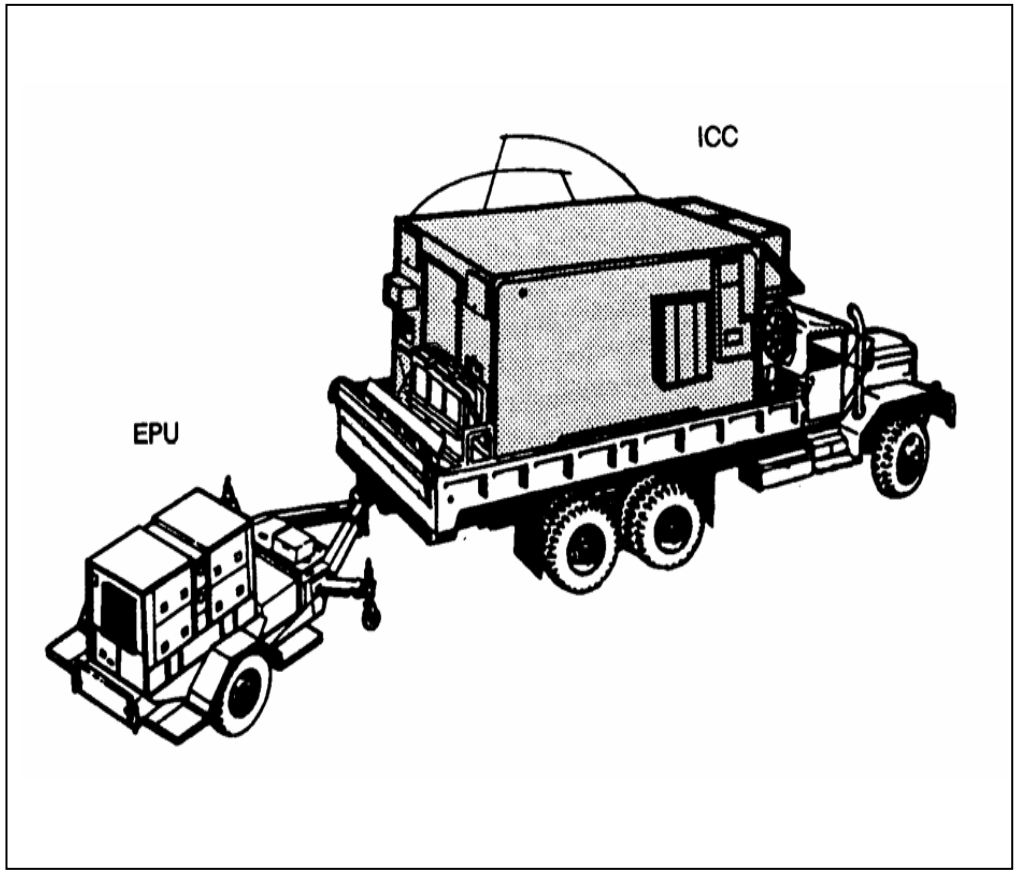

Figure 2-11. March order ICC with EPU

WALK-THROUGH INSTRUCTIONS:

a. Have crew members take their positions and perform the drill. Use the crawl-walk-run method of training. Start the training slowly. Correct any mistakes the crew members make as they go; do not proceed until drill procedures are done correctly. After the crew members demonstrate their proficiency at a slow pace, let them do it faster. Remember however, that safety is never sacrificed for speed. Watch carefully to make sure the crew members achieve all of the standards for the drill.

b. Initiating Cue. The crew receives the command, "March order."

PERFORMANCE MEASURES:

Crew members complete their performance measures as stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Before proceeding with this drill, read all DANGERS, WARNINGS, and CAUTIONS below.

DANGER

To prevent injury, ensure vehicle wheels are chocked. Do not get directly in front or back of the vehicle until wheels are chocked.

DANGER

Hazardous electrical voltages exist within the system. Do not connect or remove electrical cables while power is on. Serious electrical shock, burns, or death may result.

CAUTION

EPU operator will wait until notified by operator of the ICC before shutting down EPU power. Shutting power down too soon may interfere with ongoing operations.

Notes: The EPUs are march ordered simultaneously with the ICC and AMG. The vehicle ground guides will assist the EPU operators with connecting the M353 trailers (EPU) to the ICC and AMG. Crew member 4 represents the duties of the EPU operator.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
Note: For evaluation purpose time starts here.			
1. Receives and confirms march order. Notifies all FUs of the march order command per unit SOP. Prepares for shutdown.	1. Receives and confirms march order.	1. Receives march order. Notifies distant terminals, before rotating antennas or powering down.	1. Receives and confirms march order.
2. Informs AMG, and EPU CMs	2. Informs TCS of march order.	2. Rotates AMG antennas to	2. Assists as needed.

verbally or by audible alarm to prepare for march order.

stow.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

<u>Do not</u> block rapid shelter exit with open bay doors. Close bay doors immediately <u>after</u> task is completed.

a. Stows MS 3 chair. At A69 and A70 sets AC controls switch to off.

a. Establishes communications with AMG crew per unit SOP.

b. At antenna control unit (A41), rotates AMS HEADING control until ANTENNA POSITION-AMS HEADING pointer is at the 0-degree position.

Note: To center azimuth meter needle—
When needle points to the left of center zero, toggle the AZIMUTH-CCW-OFF-CW switch to CW.
When needle points to the right of center zero, toggle the AZIMUTH-CCW-OFF-CW switch to CCW.

c. Rotates all AMG antennas to stow. Turns AC CB to off.

d. When stow lights are on, sets AC POWER circuit breaker to off.

e. At antenna mast monitor panel (A139), sets MAST SELECTOR switch to off.

f. Informs AMG crew mast storage may begin.

3. Updates ICC database.

3. Sets up VHF radios for remote

3. Saves databases and powers

	operation.	down LCU-CADCI equipment per TM, stows LCU (if equipped).	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
a. Selects tab 90 and auto ejects EDR tape. b. Acknowledges and responds to any displayed alerts. c. Presses COMP & SYS RESET switch. Notifies CM 2 to secure software.			
4. Stows MS 1 chair.	4. When notified, secures operational software. a. Removes ICC and TRAINING (or blank) disk from disk drives 1 and 2.	4. Powers down encryption units, drivers, modems, KG-84 and JTIDS radio per TM and unit SOP.	
Note: Install shipping cartridges.	b. Removes data collection cartridge from EDR. c. Secures ICC disk, TRAINING (or blank) disk, data collection cartridge, and other classified material in safe. d. Ensures the ODU and EDR are closed and secured. e. Starts vehicle		

Notes: If PE is installed, perform purge PE procedure (refer to Appendix C, steps 26 through 32). If time does not permit, purge PE before removal and continue with drill.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
5. Performs ICC power down.		5. Powers down UHF radio relay terminal equipment per with TM and unit SOP.	
a. At generator control panel, plugs sound-powered headphone into COMM receptacle (if required.)			
b. Verifies with AMG crew that AC power is no longer required at the AMG.		b. Repeats step 5 until all UHF radio and relay terminals are powered down.	
c. Verifies all amplifier switches are off.		c. Secures auxiliary table; stows chair.	
d. Performs power down per TM 9-1430-602-10-1.		d. Exits shelter.	

WARNING

Shock hazards exist. EPU must be shut down before power cables are disconnected.

WARNING

Use hearing protection before power down of EPU. Failure to do so may cause hearing loss.

6. Informs CM 3 and CM 4 the ICC is powered down.	6. Assists CM 3 as needed.	6. When notified by CM 1 that ICC is powered down, removes AMG power and RF cables, and installs protective covers.	6. Powers down EPU per TM when notified by ICC CM 1.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			Note: Allow generator set to operate approximately 3 minutes with no load applied.
Note: If corner reflectors were used, disassemble and stow per procedures in Appendix E.			
7. If corner reflectors were used, assists CM 2 and CM 3 with disassembly and stowage.	7. If corner reflectors were used, assists CM 1 and CM 3 with disassembly and stowage.	7. If corner reflectors were used, assists CM 1 and CM 2 with disassembly and stowage.	7. Disconnects EPU cables.
			a. Disconnects EPU parallel cable between the EPUs. Replaces the parallel receptacle-shorting plug.
			b. Stows the parallel and auxiliary power/ control cables. Disconnects and stows ground cables for the EPU.

WARNING

To avoid injuries—

-Before lowering JTIDS antenna, clear all personnel from antenna maintenance platform and antenna path.

-Do not lean over the edge of antenna maintenance platform.

When lowering JTIDS antenna—

-Do not use excessive force. Can damage lower mast section and mast clamp.

-Lower JTIDS antenna carefully, and observe close clearance between mast base handle and ICC shelter, which can injure hands.

-Ensure mast clamp if fully open to avoid damaging lower mast section and mast clamp.

8. Lowers JTIDS antenna.	8. Assists CM 1 with lowering JTIDS antenna. Ensures lower mast section is in mast clamp.	8. Stows ICC VHF whip antennas.	8. Disconnects W1 and W5 cables from generator and replaces all protective caps.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	Ensures lower mast section is in mast clamp.		
9. Removes JTIDS antenna.	9. Assists as required.		
10. Stows JTIDS antenna.	10. Assists as required.		
a. At forward curbside water intrusion duct, sets handle to WINTER position, or closes inlet-outlet air vents.			
b. Unties, rolls down, and secures air conditioner covers.			
c. Climbs down from maintenance platform and lowers platforms.			
	11. Closes all rear exterior air and fan vents and locks shelter doors.		11. At forward roadside water intrusion duct sets handle to WINTER position, or closes inlet-outlet air vents.
12. Disconnects and stows power and control cables.	12. Disconnects and stows power and control cables.	12. Recovers fire extinguisher and system grounds.	12. Disconnects and stows power and control cables.
13. If PE is installed, assists CMs 2 and 3 disassemble and stows PE per Appendix F.	13. If PE is installed, assists CMs 1 and 3 disassemble and stows PE per Appendix F.	13. If PE is installed, assists CMs 1 and 2 disassemble and stows PE per Appendix F.	13. Picks up and stows fire extinguisher for EPU.
14. Retrieves ground cables and stows in forward part of truck bed.	14. Climbs into rear of truck bed and secures PE storage rack.	14. If necessary, helps CM 2 secures PE storage rack.	14. Prepares EPU trailer for hook up to the ICC.

WARNING

Truck tailgate and boarding ladder are heavy. To avoid injury, two crew members are required to carry the ladder and raise the tailgate.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
15. Removes and stows boarding ladder.	15. Removes and stows boarding ladder.		
16. Assists CM 2 to rise tailgate and secures.	16. Unhooks and raises tailgate to closed position and secures.		
17. Enters ICC cab. Notifies CM 2 to remove wheel chocks.	17. When notified by CM 1, removes and stows curbside and roadside chocks.	17. Assists as required.	17. Assists as needed.
18. Maneuvers ICC truck to hook up EPU trailer.	18. Coordinates with EPU operator to maneuver ICC to hook up EPU.	18. Assists as required.	18. Helps ICC ground guide (CM 2) and orients the ICC for hookup with EPU.
19. Hooks up EPU to ICC	19. Hooks up EPU to ICC.	19. Hooks up EPU to ICC.	19. Hooks up EPU to ICC.
		a. Assists to CM 4 raise trailer swivel casters.	a. Raises trailer swivel casters.
b. Backs up to EPU, per CM 2s guidance.	b. Guides CM 1 as he backs vehicle up to EPU. Commands, “Halt vehicle.”		
c. Places transmission in neutral, and sets emergency brake.		c. Assists CM 4 to lower EPU tongue.	c. Lowers EPU tongue.
		d. Assists CM 4 with pintle hook, cable, brake lines, and safety chains.	d. Assists CM 3 with pintle hook, cable, brake lines, and safety chains.
		e. Assists CM 4 to release brakes and stows chocks.	e. Releases brakes and stows chocks.
20. Performs and verifies vehicle	20. Checks vehicle safety	20. Assists as required.	20. Assists as required.

safety operations per unit SOP.	operations; coordinates with CM 1.		
CREW MEMBER 1	**CREW MEMBER 2**	**CREW MEMBER 3**	**CREW MEMBER 4**

Note: For evaluation purpose time stops when chocks are stowed.

21. Proceeds with road march plans.	21. Ground guides the ICC with EPU, and proceeds with road march plans.	
	22. Reports to the OIC that the ICC with EPU is road marched.	22. Performs after-operations PMCS.

Note: PMCS is not a timed drill.

COACHING POINT: The performance measures are done in the sequence outlined. All crew members do their like-numbered tasks at the same time. When all the individual tasks have been mastered and all crew members can do their jobs without coaching, go for speed and remember to be safety-conscious. The more the drill is performed, the better the crew members will perform together.

RUN-THROUGH INSTRUCTIONS: The crew members should practice this drill until they can perform the drill according to the standard without using the drill book. The initial run-through should be conducted slowly. The crew members should change positions in order to learn all steps and standards.

PERFORM: When the crew members can perform this crew drill to standard, inform the platoon sergeant or platoon leader that the crew members are ready to be evaluated.

SUPPORTED T&EOS

ARTEP NUMBER	T&EO NUMBER	T&EO TASK TITLE
44-635-MTP	44-4-9044	Perform March Order

2-5. Crew Drill 44-5-D008.

TASK: Prepare the CRG, AMG, With EPU for Road March (44-5-D008).

CONDITION: The CRG, AMG, and EPUs are emplaced and the communications relay section has been ordered to occupy a new position. All components of the communications relay section are available and operable. A crew has been assigned to march order the system in all environmental conditions both day and night. The crew receives the command, "March order."

STANDARDS: March order the CRG, AMG, and EPUs by the performance measures as sequenced in this drill. Complete this drill within 45 minutes when in a training environment.

Notes:

- Allow additional march order time when UHF communication corner reflectors and NBC protective entrance assembly A108 are to be removed.
- Allow additional march order time for AMG guy wire kit removal.
- The time required to perform this drill in MOPP4 will increase per ARTEP 44-637-30-MTP, Figures 5-1 and 5-2.

SUPPORTING INDIVIDUAL TASKS: Supporting individual tasks for these drills are listed in Appendix A, Individual Task-To-Drill Matrix.

ILLUSTRATIONS: Figures 2-12 through 2-13.

SETUP INSTRUCTIONS: The following equipment, areas, and personnel must be provided for the drill to be trained correctly.

a. Resources. As a minimum, the following are required: One CRG, guided missile system, (truck-mounted); one AMG, communications (truck-mounted); and two EPUs, generator (trailer-mounted); all with basic issue items.

b. Training Site. The emplaced CRG, AMG, and EPUs are in an area large enough (20x35 meters) to perform all operations for march order. The site should be as level as possible, without any overhead obstacles or power lines.

c. Unit Instructions. Crew members must march order the CRG, AMG, and EPUs.

TALK THROUGH INSTRUCTIONS: The communications relay section has received a movement order to a new field position. Crew members have the responsibility to march order the CRG, AMG, and EPUs within the prescribed time limits.

a. Orientation: Before beginning drill training, ensure that each crew member knows the purpose of the drill and is briefed on safety awareness.

b. Safety/Fratricide: All soldiers that operate the CRG, AMG, and EPUs must know that safety hazards exist while operating the various items of equipment. These hazards can and have caused severe injuries to operators. Be extremely careful when working around the CRG, AMG, and EPUs. Throughout the crew drill, observe all dangers, warnings, and cautions required to properly emplace the CRG, AMG, and EPUs. All commanders, trainers, and leaders must plan, train, and stress all procedures that must be followed to avoid fratricide. These procedures include IFF, weapons control status, vehicle and aircraft recognition, corridors, routes, zones, flight levels, and other control measures. Munitions cannot distinguish between friend and foe.

c. Demonstration (optional): If a nearby crew has successfully performed the drill, have that crew demonstrate the drill. Explain their actions using the performance measures as a guide. After the demonstration, summarize.

d. Explanation: Explain the drill in the following manner:

(1) Using a diagram, Figures 2-12 and 2-13, a sand table, or a simple sketch in the dirt, show the crew members how the communications relay section equipment should be marched ordered.

(2) Tell each crew member what their duties are in the drill.

(3) Read the performance measures of the drill to the crew members.

(4) Have each crew member explain their performance measures to ensure that they understand them.

WALK-THROUGH INSTRUCTIONS:

a. Use the Crawl-Walk-Run Method of Training. Start the training slowly. Correct any mistakes the crew members make as they go. Do not proceed until the drill is done right. After the crew members demonstrate their proficiency at a slow pace, let them do it faster. Remember however, that safety is never sacrificed for speed. Watch carefully to make sure the crew members achieve all of the standards for the drill.

b. Initiating Cue. The crew receives the command, "March order."

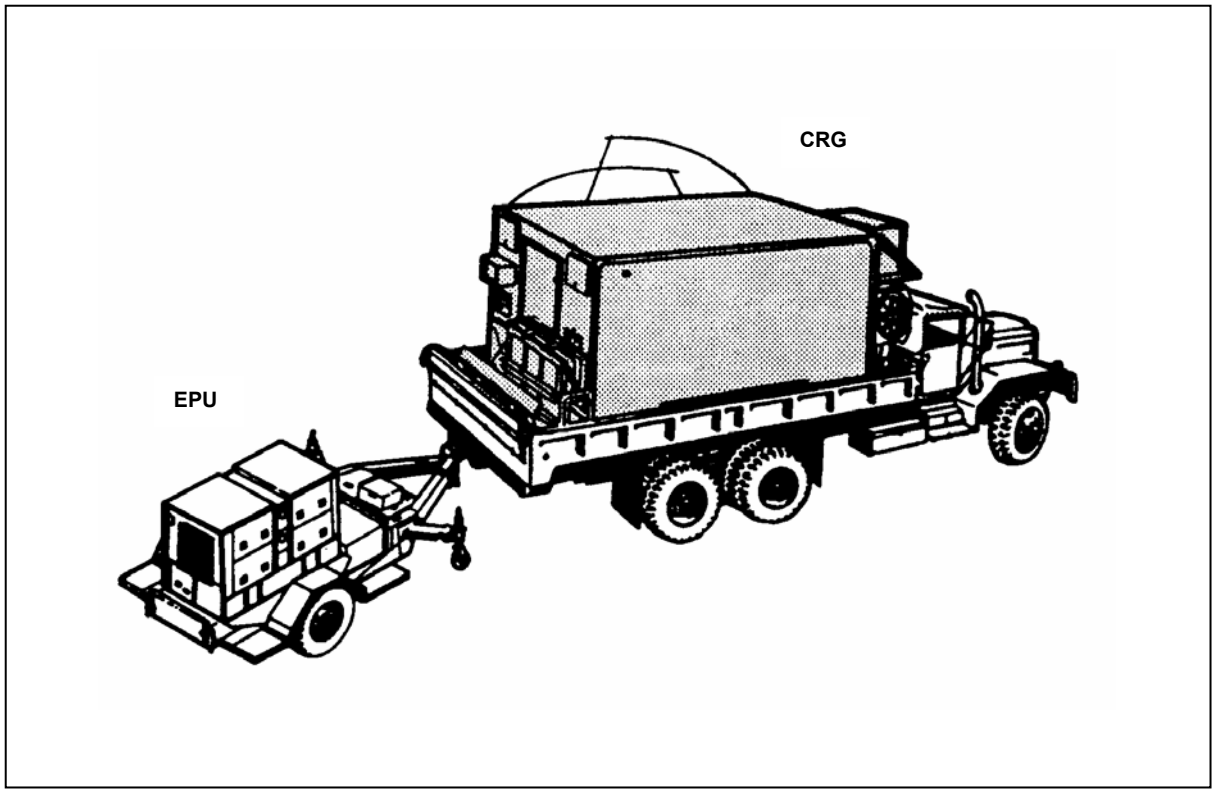

Figure 2-12. March order CRG with EPU

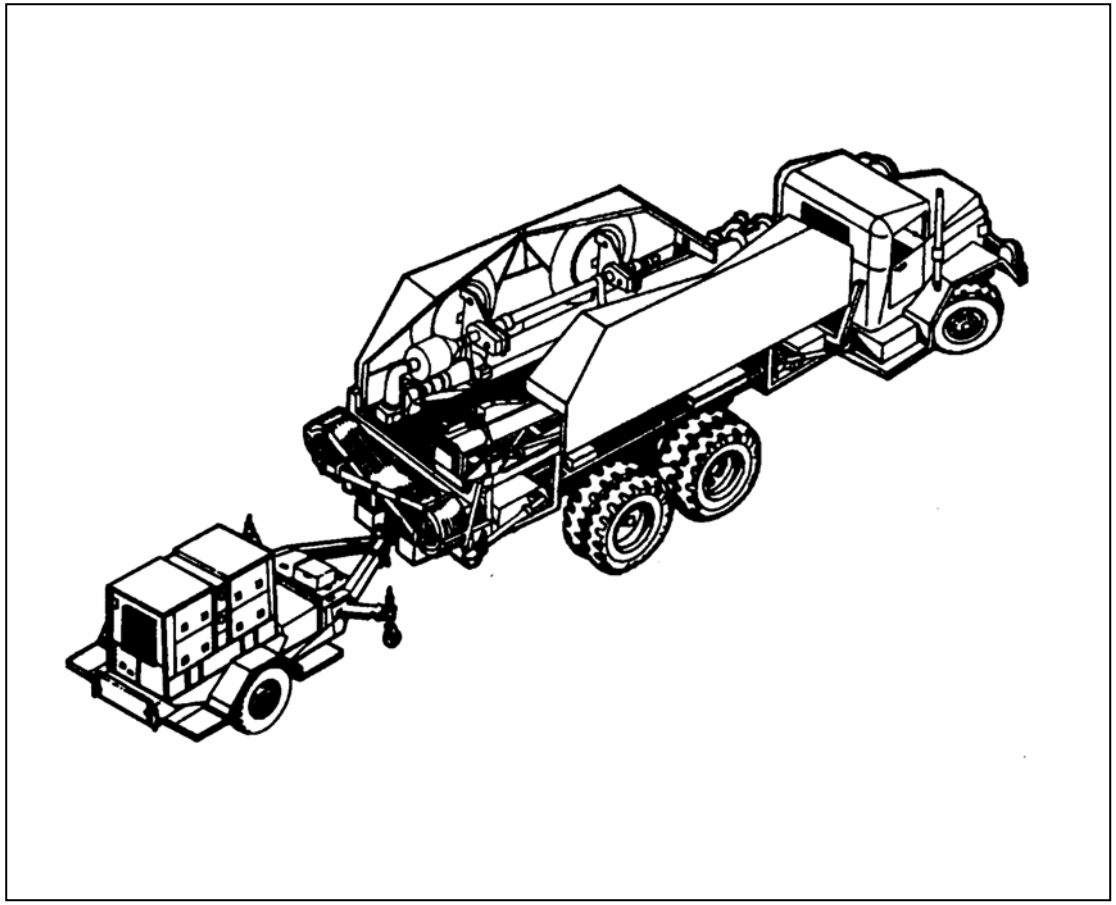

Figure 2-13. March order AMG with EPU

PERFORMANCE MEASURES:

Crew members listed below, complete performance measures as stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Notes:

- March order of the communications relay section equipment requires coordination and communications between all crew members assigned to the communications relay section.
- The AMG and EPUs are march ordered simultaneously with the CRG. The CRG and AMG ground guides assist with equipment march order.
- Disconnecting, observing, removing stakes and guy wires applies only to AMGs with guy wire accessories.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
DRIVER AMG/EPU	CREW MEMBER	DRIVER CRG/EPU	CREW CHIEF

Notes:

- Any CM may receive the march order command, confirm march order per the unit SOP, and inform all other CMs of the march order command.
- For evaluation purpose time starts here when march order is received.+

			1. Receives and confirms march order per unit SOP.
2. Receives march order from CM 4.	2. Receives march order from CM 4.	2. Receives march order from CM 4.	2. Informs CM 1, 2, and 3 to prepare for shutdown and march order.
3. Assists CM 2.	3. Goes to AMG and prepares for march order.	3. Assists CM 4.	3. Prepares CRG for march order.
a. Starts AMG vehicle engine.	a. Removes sound-powered telephone from storage box; connects it to selected distribution box (if used).	a. Starts CRG vehicle engine.	a. Notifies distant terminals, <u>before</u> rotating antennas or powering down.
b. Removes and stows guy wire warning signs, flags, and area ropes.	b. Establishes communication with the CRG operator.	b. Removes and stows guy wire warning signs, flags, and area ropes.	b. Establishes commo with the AMG.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
c. Releases tension on curbside guy wire tensioners with tensioner adjusting nut.		c. Releases tension on curbside guy wire tensioners with tensioner adjusting nut.	c. Do not shut down until you have the new multichannel communications plan.
d. Climbs onto AMG platform.		d. Climbs onto AMG platform.	
e. Opens roadside cable tray.		e. Opens curbside cable tray.	
Note: CMs 1 and 3 skip step 4 if antenna protective covers were not raised during AMG guy wire emplacement.			
4. Deploys antenna protective covers.	4. Notifies CRG operator to rotate all antennas to stow position.	4. Deploys antenna protective covers.	4. When notified by CM 2, sets AMG antennas to stow position.
a. Releases both antenna protective cover front-retaining handles, and stows quick-release pins.		a. Releases both antenna protective cover rear-retaining handles, and stows quick-release pins.	
			Note: To center azimuth meter needle-- When needle points to the left of center zero, toggle AZIMUTH-CCW-OFF-CW switch to CW. When needle points to the right of center zero, toggle AZIMUTH-CCW-OFF-CW switch to CCW.
b. Turns front handles to release antenna protective covers.	b. Turns rear handles to release antenna protective covers.		b. Rotates all AMG antennas to stow.
Note: Stow position for antennas 1 and 2 is 270 degrees. Stow position for antennas 3 and 4 is 90 degrees.			

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			(1) At antenna control unit A41, rotates AMS heading control unit until ANTENNA POSITION-AMS HEADING pointer is at the 0-degrees position.
c. Notifies CM 3 front handles are released.		c. Notifies CM 1 rear handles are released.	
d. Sets roadside pump control valve lever to DOWN.		d. Sets roadside pump control valve lever to DOWN	d. When stow lights are on, sets AC POWER circuit breaker to OFF.
Note: Do not remove air vent plug.		Note: Do not remove air vent plug.	
e. Turns air vent plug ccw about one half turns.	e. When notified by CM 4 that antennas are stowed, turns off all distribution box switches. Begins lowering the first mast.	e. Turns air vent plug ccw about one half turn	e. At antenna mast monitor panel A139, sets MAST SELECTOR switch to OFF
f. Pushes roadside antenna cover outward and down.		f. Pushes roadside antenna cover outward and down.	f. Notifies CM 2 antennas are stowed and mast stowage operation can begin.
g. Places the roadside control valve lever to HOLD.		g. Places the roadside control valve lever to HOLD.	

CAUTION

Before lowering the first mast, ensure that the other mast is at least one section higher than the base.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
WARNING **If cables or guy wires become entangled, notify CM 2 to stop retracting mast.**			
Note: If mast comes down too quickly, notifies CM 2.	Note: If mast comes down too quickly, place MAST EXTENSION switch to PAUSE temporarily.		
5. Retracts the selected mast.	5. Retracts the selected mast.	5. Retracts the selected mast.	5. Powers down UHF radio delay terminal equipment.
a. Notifies CM 2 to retract selected mast.	a. When notified by CM 1 to retract selected mast, opens mast control door, places MAST EXTENSION switch to IN, and retracts the selected mast.		a. At RF filters, adjusts DRIVE PWR ADJ knob fully cw for a minimum signal level (white zone) on filter MONITOR meter.
b. Observes and ensures mast cables and or guy wires remain free as mast is retracted.		b. Guides cables neatly into cable tray as mast comes down.	b. Powers down Encryption Device TSEC/94A per KAM-456A/TSEC.
c. Assists CM 3 as needed.		c. Continues laying cable back on itself.	c. If holding memories are to be saved during power down (road march) procedures, places the ON/STBY/ ZEROIZE-OFF switch to STBY and POWER ON/OFF switch to OFF. Ensures the TSEC/94A has a 9-vdc battery installed.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
d. Notifies CM 2 when mast is fully retracted.	d. When notified by CM 1 mast is fully retracted, places MAST EXTENSION switch to PAUSE.	Note: When mast is retracted, each cable tray section should have two layers of cable.	d. If holding memories are not to be saved during power down (road march) procedures, places the ON/STBY/ ZEROIZE-OFF switch to OFF and POWER ON/OFF switch to OFF.
	Note: Wait until CM 1 has stowed lock strut and is clear of mast path, before continuing.	Note: If your mast group has a safety chain between rear handrails, unhook chain. Hook chain back after mast is stowed.	e. Powers down radio transmitter T-983 and radio receiver R-1329 as described in TM 11-5820-540-12. Sets the AC POWER switches to OFF.
WARNING **Do not release lock strut if hydraulic system is leaking or not working.**	**CAUTION** Do not operate MAST ERECTION switch with lock strut installed.		f. Repeats step 5 until all UHF radio relay terminals are powered down.
6. Lowers selected mast to 15-degree-position.	6. Lowers selected mast to 15-degree-position.	6. Lowers selected mast to 15-degree-position.	6. Sets up VHF radios for remote operation.
a. Pulls quick-release pin securing lock strut, and pulls lock strut from mast pin. Stows lock strut.	a. After lock strut is stowed, secures it with elastic cord.	a. Disconnects chain from rear handrail.	a. At power supply A25, verifies AN/VRC-92A A87 and EXTERNAL ALARM POWER AMP A88 are set to ON.

WARNING

Before lowering mast, ensure the path of mast travel path is clear of personnel and obstructions.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

CAUTION
Take care that antennas of one mast do not get entangled in the cables or gut wire of the other mast.

b. Notifies CM 2 to lower the mast. Observes guy wires, if used.	b. When notified by CM 1, sets MAST ERECTION switch to LOWER, and lowers the mast.	b. Guides cables into cable tray as mast is lowered.	b. At local control radio set, verifies power ON/OFF switch is set to ON and TEL/REMOTE Radio switch is in REMOTE position.
c. Observes mast and notifies CM 2 to stop mast movement if there are any obstructions.	c. Lowers mast to 15-degree-position.		c. At VHF Radio, verifies RT-A controls are at operating settings and tuned to correct frequency per communications plan.
	d. Closes and latches control panel door.		d. At remote control radio sets VOLUME-ON/OFF to mid-range and TEL/-RAD/SPKR to RAD/SPKR.

Note: Skip steps 7 and 9 if guy wire removal does not apply.

WARNING
Guy wires can injure hands. Ensure gloves are worn when handling guy wires.

Note: Each mast will have four guy wires for removal (two for each hoist ring).

7. Disconnects guy wires from selected mast.	7. Takes guy wires from CMs 1 and 3.	7. Assists CM 1 with disconnecting guy wires from selected mast.	
a. Disconnects guys wire hooks from hoist rings on mast.		a. Assists as needed.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
b. Hands each guy wire down to CM 2.	b. Takes each guy wire from CMs 1 or 3, and places on the ground, out of the way, for safety.	b. Assists as needed.	
8. Repeats steps 5 and 6 to retract and lowers the second mast.	8. Repeats steps 5 and 6 to retract and lowers the second mast.	8. Repeats steps 5 and 6 to retract and lowers the second mast.	8. Powers down CRG.
a. Assists as needed.	a. Assists as needed.	a. Assists as needed.	a. At air conditioner control A69, sets MODE ELECTION SWITCH to OFF. b. Verifies with AMG that ac power is no longer required. Verifies all amplifier switches are off. c. At distribution panel A66, verifies 28 VDC-BATTERY POWER is ON. If not ON, sets EPP INPUT PWR-BATTERY POWER to ON. d. At distribution panel A66, sets following CBs to OFF: (1) AIR COND CURBSIDE and PACKET switch. (2) UHF ANT CONTROL and CONTROL/POWER. (3) LCU, CADCI, IDOCS and OCU.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
			(4) BSE MSE. (5) MODEMS. (6) RLRIU. (7) Secures PWR RRT 1, 2, 3, and 4. (8) NOT SECURE PWR RRT 1, 2, 3, and 4. (9) ROADSIDE and CURBSIDE FANS. (10) COMMO PWR SPLY. (11) PWR DIST UNIT PWR SPLY. (12) UHF AMS PWR AMPL. e. At power supply A25, sets UHF ANT CONT to OFF. f. At lighting control panel A71, ensures NORMAL/OFF/ MAINTENANCE is set to NORMAL. g. At generator control panel A64, sets GENERATOR PWR-ECS (CRG) to OFF.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING
To prevent injury, stand clear of antennas when they are being rotated to the stowed position.

h. Notifies CM 2 that power to AMG has been removed and it is now safe to disconnect and stow AMG cables.

9. Repeats step 7 to remove guy wires from the second mast (if required).

9. Repeats step 7 to remove guy wires from the second mast (if required).

9. Repeats step 7 to remove guy wires from the second mast (if required).

9. Stows and secures all equipment and classified items.

10. Folds in upper mast amplifier assembly.

a. Checks antenna clamp hand knobs; ensures they are in up position. (Hand knobs must not obstruct clamps.)

10. Folds in upper mast amplifier assembly.

a. Unlocks antenna positioning swivel handle securing the upper mast. Rotates handle out of notch in bracket and screws swivel handle in.

CAUTION
If any obstructions occur as the mast is cranked around and in, notify CM 1 immediately.

b. Removes antenna position handle from its storage position on the handrail.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
c. Installs handle on antenna position shaft.			
d. When notified by CM 3, turns antenna position handle ccw to fold antenna amplifier assembly.		d. Notifies CM 1 to fold mast. Observes antennas. Notifies CM 1 to stop if there are any obstructions.	
e. Cranks in amplifier assembly mast.		e. As the amplifier assembly mast approaches, lifts and guides assembly into antenna clamps	
f. Removes handle and stows antenna position handle.			
g. Secures upper mast amplifier assembly with mast clamps.		g. Secures upper mast amplifier assembly mast clamps.	
h. Installs amplifier cover.		h. Assists in installation of amplifier cover.	
11. Repeats step 10 to fold the second antenna mast.		11. Repeats step 10 to fold the second antenna mast.	11. Exits CRG shelter and closes door.
			a. Closes inlet-outlet air and fan doors.
			b. Notifies CMs that CRG is powered down.

WARNING

Make sure mast travel path is clear of personnel and obstructions. Notify CMs 1 and 3 you are going to lower mast.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
12. Lowers selected mast to horizontal position.	12. Lowers selected mast to horizontal position.	12. Lowers selected mast to horizontal position.	12. Stows VHF whip antennas.
a. Notifies CM 2 to lower mast. Ensures mast travel path is clear and cables do not become entangled.	a. When notified by CM 1, at mast control unit, holds MAST ERECTION switch to LOWER and at the same time pushes LIM OVRD button to lower mast. Note: If AMG is emplaced after road march (that is, if air tanks are to be charged), leave switches in DC MODE. Otherwise, place switches to OFF or AC MODE.	a. Guides cables into tray as mast is lowered.	a. At front of CRG truck bed, roadside, unties front antenna tie-down.
b. Fastens both yellow mast clamp knobs.	b. In road march DC MODE, sets the following switches on mast control unit. (1) MAST EXTENSION switch--IN. (2) COMPRESSOR MODE switch--DC. (3) COMPRESSOR DC MODE switch--ON.	b. Closes cable tray covers.	b. Goes to rear of truck bed. Pulls top of front antenna down to a 45-degree angle to the roof of CRG shelter. Secures tie-down to rear hook.
	c. Closes and latches mast control unit door.		c. Unties rear antenna. Goes to roadside front of truck bed, and pulls top of rear antenna down to roof of CRG shelter. Secures tie-

down to front hook.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

Use hearing protection before power down of generator. Failure to do so may cause hearing loss.

WARNING

Shock hazards exist. EPU must be shut off before power cables are disconnected.

13. Repeats step 12 to lower the second mast to horizontal position.	13. Repeats step 12 to lower the second mast to horizontal position.	13. Repeats step 12 to lower the second mast to horizontal position.	13. Goes to EPU and powers down. a. Opens control panel; performs the following: (1) Places the circuit breaker switch in the OPEN position. Note: Allow generator set to operate approximately 3 minutes with no load applied. (2) Places the START-RUN-STOP switch to STOP. (3) Places DC circuit breaker to OPEN. b. Performs after-operations PMCS per Appendix G.

CAUTION

Before stowing antennas, position antennas so bars are horizontal (vertical polarization).

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

If handles are <u>not</u> positioned correctly, they can puncture the fuel tank, causing a severe fire hazard.

WARNING

There are many tripping and falling hazards when walking on antenna protective cover. Use extreme caution.

14. If necessary, changes antenna polarization to vertical.	14. Collapses and stows stabilizing strut.	14. Assists CM 1 with changing antenna polarization to vertical (if necessary).	14. Disconnects EPU cables.
a. Removes four quick-release pins to reposition antenna dish.	a. Removes quick-release pin from stabilizing strut.	a. Holds antenna dish as CM 1 removes quick-release pins.	a. Disconnects parallel cable between the EPUs. Replaces the parallel receptacle shorting plugs.
b. Installs quick-release pins after CM 3 rotates antenna dish.	b. Moves height guide to lowest position.	b. After CM 1 has pulled the quick-release pins, rotates antenna 90 degrees. Holds antenna while CM 1 installs pins.	b. Disconnects the auxiliary power/ control cable between the EPUs. Replaces protective cable caps.
	c. Unfolds and turns handles ccw, raises stabilizing pad off the ground, and folds handles up.		c. Removes protective cap and reconnects P3 power/ control cable to connector J3 on standby power unit.
	d. Swings stabilizing strut up and slides it toward the truck frame.		d. Stows the paralleled and auxiliary power/control cables.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	e. Places strut in storage bracket and installs quick-release pin to secure.		e. Disconnects W1 power and W5 control cables from generator PDU, and replaces all protective caps. f. Removes any external fuel source, if used.
15. Repeats step 14 for other antennas as necessary.	15. Repeats step 14 for remaining stabilizing struts.	15. Repeats step 14 for other antennas as necessary.	15. Disconnects and stows EPUs ground cable. a. If time permits, removes, and stows ground rod.

WARNING
It is easy to pinch fingers when stowing feed horns; use extra care.

CAUTION
Feed horns are fragile. Handle with extreme caution.

16. Stows antenna feed horns.	16. Closes air flaps on air compressor intakes if AMG is not to be emplaced after road march.	16. Assists CM 1 with stowage of antenna feed horns.	16. Goes to CRG, disconnects all AMG cables, and installs connector dust covers. Sets cables down on truck bed.
		a. Walks out on antenna protective cover; helps with feed horns.	
b. Turns lever ccw to release tension on feed horn shaft.		b. Holds antenna feed horn as CM 1 releases it. Do not let it fall.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
c. Removes quick-release pin and pulls feed horn in to stow position. d. Installs quick-release pin. e. Turns lever cw to tighten.		c. Pushes feed horn in and holds while CM 1 secures it.	
17. Repeats step 16 for all remaining feed horns.	17. At distribution box, performs the following: a. Sets MAST WARNING LIGHT switch to OFF. b. Sets LAMP CONTROL switch to desired position. c. Disconnects sound-powered telephone, closes cover, and stows phone in curbside storage box (if used).	17. Repeats step 16 for all remaining feed horns.	17. Assists as required.
18. Returns each antenna to 0-degrees-elevation, if necessary. a. Removes quick-release pin securing strut. b. Positions antenna dish to 0-degrees-elevation. c. Installs quick-release pin.	18. Disconnects AMG ground cable. a. Removes and stows AMG ground cable. b. Removes and stows ground rod and tools (if required).	18. Assists CM 1 to return each antenna to 0-degrees-elevation, if necessary.	18. Disconnects CRG ground cable. a. Removes and stows CRG ground cable. b. Removes and stows ground rod and tools (if required). c. Unties and secures air conditioner cover.

19. Repeats step 18 for all antennas, as necessary.	19. Assists as required.	19. Repeats step 18 for all antennas, as necessary.	19. Assists as required.
CREW MEMBER 1	**CREW MEMBER 2**	**CREW MEMBER 3**	**CREW MEMBER 4**
20. Raises roadside antenna cover. a. Places roadside antenna covers control valve to UP. b. Pumps handle up and down to raise protective cover. c. Observes antenna cover as it comes up to its protective position. d. Places control valve to HOLD. Pushes pump handle down and secure. e. Closes air vent plug. f. Locks front roadside and curbside protective covers, in the up position. Installs quick-release pins. h. Climbs down from AMG platform		20. Raises curbside antenna cover. a. Places curbside antenna cover control valve to UP. b. Pumps handle up and down to raise protective cover. c. Observes antenna cover as it comes up to its protective position. d. Places control valve to HOLD. Pushes pump handle down and secure. e. Closes air vent plug. f. Locks rear curbside and roadside protective covers in the up position. Installs quick-release pins. g. Connects chain to rear handrails. h. Climbs down from AMG platform.	

Note: If corner reflectors were used, disassemble and stow per procedures in Appendix E.

Note: Refer to Annex I if configured as a Launching Control Station (LCS).

21. Assists CMs 2 and 3	21. Assists CMs 1 and 3	21. Assists CMs 1 and 2	21. Assists as required.

disassemble and stow corner reflectors (if used).	disassemble and stow corner reflectors (if used).	disassemble and stow corner reflectors (if used).	
CREW MEMBER 1	**CREW MEMBER 2**	**CREW MEMBER 3**	**CREW MEMBER 4**

WARNING
Power cable weighs approximately 180 pounds. Do not attempt to carry by yourself.

22. Retrieves and stows AMG cables from CRG. Note: Coil cables tightly in a figure 8 configuration with the help of CM 3. a. Ensures protective dust caps are installed. b. First coils two bundles of RF cables and then coils the two control cables. Coils power cable last. c. Secures cables tightly with cable straps.	22. Assists CM 4 retrieve and stow power and control cables at the CRG (or at the EPU).	22. Assists CM 1 retrieve and stow AMG cables.	22. Retrieves and stows power and control cables at the CRG (or at the EPU).

Note: Skip steps 23 and 24 if guy wire removal does not apply.

WARNING
Guy wires can injure hands. Wear gloves when handling guy wires.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
23. Stows guy wire accessories. a. Disconnects each tensioner front roadside stake shackles. b. Coils guy wire around each tensioner clip. c. Secures each tensioner guy wires loop coil with chain. d. Stows roadside guy wire tensioners.	23. Stows guy wire accessories. a. Removes each roadside guy wire stake. b. Removes guy stake attachment pins and shackles. c. Removes guy stake attachment. d. Stows guy stakes and guy stake attachment parts.	23. Stows guy wire accessories. a. Assists CM 2 to remove each roadside guy wire stake. b. Assists CM 2 with guy stake attachments. d. Assists CMs 1 and 2 stow guy wire equipment.	23. Assist as required.
24. Repeats step 23 for curbside.	24. Repeats step 23 for curbside.	24. Repeats step 23 for curbside.	
25. If PE was installed, helps CMs 2 and 3 disassemble and stow PE per Appendix E.	25. If PE was installed, assists CMs 1 and 3 disassemble and stow PE per Appendix E.	25. If PE was installed, assists CMs 1 and 2 disassemble and stow PE per Appendix E.	25. Picks up and stows fuel cans and fire extinguisher for each EPU.
26. If necessary, assists CM 3 to secure PE storage rack.	26. Prepares EPU trailer for hook up with AMG.	26. Climbs into rear truck bed, locks shelter door, and secures PE storage rack.	26. Prepares EPU trailer for hookup with CRG.

WARNING

Truck tailgate and boarding ladder are heavy. To avoid injury, two crew members are required to carry the ladder and raise the tailgate.

27. Assists CM 3 remove and stow boarding ladder.		27. Removes and stows boarding ladder.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
28. Assists CM 3 unhook, raise, and secure tailgate.	28. Notifies CM 1 that EPU is ready for hook up. a. Stows C/S AMG fire extinguisher.	28. Unhooks and raises tailgate to closed position and secure.	28. Notifies CM 3 that EPU is ready for hook up. a. Stows C/S CRG fire extinguisher.
29. Enters AMG cab. Notifies CM 2 to remove wheel chocks.	29. When notified, removes curbside and roadside chocks, and stow.	29. Enters CRG cab. Notifies CM 3 to remove wheel chocks.	29. When notified, removes curbside and roadside chocks, and stow.
30. Hooks up EPU to AMG. a. Prepares to back up vehicle.	30. Hooks up EPU to AMG. a. Raises roadside and curbside swivel casters high enough to couple onto AMG pintle.	30. Hooks up EPU to CRG. a. Prepares to back up vehicle.	30. Hooks up EPU to CRG. a. Raises roadside and curbside swivel casters high enough to couple onto CRG pintle.
b. Backs up to EPU. Places transmission in neutral and sets emergency brake.	b. Guides CM 1 as he backs vehicle up to EPU.	b. Backs up to EPU. Places transmission in neutral and sets emergency brake.	b. Guides CM 3 as he backs vehicle up to EPU
	c. Lowers EPU tongue onto AMG pintle.		c. Lowers EPU tongue onto CRG pintle.
d. Exits cab after wheels are chocked.	d. Chocks AMG wheels. Notifies CM 1 to exit.	d. Exits cab after wheels are chocked.	d. Chocks CRG wheels. Notifies CM 3 to exit.
e. Hooks up EPU intervehicular light cable, and emergency and service air lines to AMG.	e. Closes pintle and inserts cotter pin. Raises and stows roadside and curbside trailer swivel casters.	e. Hooks up EPU intervehicular light cable, and emergency and service airlines to CRG.	e. Closes pintle and inserts cotter pin. Raises and stows roadside and curbside trailer swivel casters.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
f. Stows EPU wheel chocks.	f. Releases roadside and curbside trailer brakes.	f. Stows EPU wheel chocks.	f. Releases roadside and curbside trailer brakes.
g. Returns to vehicle cab.	g. Removes and stows AMG chocks.	g. Returns to vehicle cab.	g. Removes and stows CRG chocks.
Note: For evaluation purpose time stops when the last EPU is clear of stakes.			
31. Verifies vehicle operations. Performs safety checks per SOP.	31. Verifies vehicle operations. Performs safety checks per SOP.	31. Verifies vehicle operations. Performs safety checks per SOP.	31. Verifies vehicle operations. Performs safety checks per SOP.
32. Proceeds with road march plans.	32. Ground guides AMG, pulls over stake, and proceeds with road march plans.	32. Proceeds with road march plans.	32. Ground guides CRG and proceeds with road march plans

COACHING POINT: The performance measures are done in the sequence outlined. All crew members do their like-numbered tasks at the same time. When all the individual tasks have been mastered and all crew members can do their jobs without coaching, go for speed and remember to be safety-conscious. The more the drill is performed, the better the crew members will perform together.

RUN-THROUGH INSTRUCTIONS: The crew members should practice this drill until they can perform the drill according to the standard without using the drill book. The initial run-through should be conducted slowly. The crew members should change positions in order to learn all steps and standards.

PERFORM: When the crew members can perform this crew drill to standards, inform the platoon sergeant or platoon leader that the crew members are ready to be evaluated.

SUPPORTED T&EOS

ARTEP NUMBER	T&EO NUMBER	T&EO TASK TITLE
44-635-MTP	44-4-9044	Perform March Order

2-6. Crew Drill 44-5-D021.

TASK: The Crew will Emplace and Prepare the Patriot TCS, Tactical Command System for Action (44-5-D021).

CONDITIONS: The Patriot TCS system is in a march order configuration. The section chief commands, "Prepare for action."

STANDARD: The crew must emplace and prepare the system for action in sequence according to the performance measures within 45 minutes when in a training environment.

Note: The time required to perform this drill in MOPP4 will increase per ARTEP 44-637-30-MTP, Figures 5-1 and 5-2.

SUPPORTING INDIVIDUAL TASKS: Supporting individual tasks for these drills are listed in Appendix A, Individual Task-to-Drill Matrix.

ILLUSTRATIONS: None

SETUP INSTRUCTIONS: The following equipment, areas, and personnel must be provided for the drill to be trained correctly:

a. Resources. As a minimum, the following are required:

(1) Patriot Tactical Command System.

(2) M934 truck, 6X6, truck, van, expansible, 5-ton.

(3) Generator set, diesel, 30-kilowatt, trailer-mounted.

(4) TIBS antenna group, 2 each.

(5) TADIL-A antenna group.

(6) A designated manning crew.

(7) Individual weapons, NBC protective clothing, and equipment.

b. Training Site. The location may be either an initial ready site or a field site.

c. Unit Instructions. From the march order configuration, the crew will emplace the Tactical Command System.

TALK-THROUGH INSTRUCTIONS: The objective of the TCS system crew drills is to prepare the system for action as rapidly as possible so that timely operational data is disseminated to the supported sections.

a. Orientation. Before beginning drill training, ensure that each crew member knows the purpose of the drill and is briefed on all safety requirements found in each system TM.

b. Safety/Fratricide. All crew members that operate the TCS system must know that safety hazards exist while operating various items of equipment. These hazards can and have caused both death and severe injuries to operators. Some of the hazards present are—

(1) Burn injury.

(2) Heat injury.

(3) High voltage.

(4) Hydraulic pressure.

(5) Lifting injury.

(6) Mechanical.

(7) Noise.

(8) Vehicle.

(9) Chemical.

(10) Carbon Monoxide.

To prevent injury or death, every crew member must know which safety hazards exist and how to avoid them. Accidents occur primarily because personnel are not aware of potential safety hazards or because they are careless. All notes, cautions, warnings, and dangers found in each TM are valid and apply throughout the conduct of the drills within this booklet.

These drills are designed to prepare each TCS system for action as rapidly as possible. However, safety is never sacrificed for speed.

c. Demonstration. If another crew has successfully performed the drill, have that crew demonstrate the drill. Describe their actions using the performance measures as a guide. After the demonstration, summarize.

d. Explanation. Explain the drill in the following manner:

(1) Tell crew members what their duties are in the drill.

(2) Read the performance measures for the drill to the crew members.

(3) Ask crew members to explain their roles in the drill, including the performance measures, to ensure that they understand them.

(4) Due to various equipment configurations, crew abilities, and the time allowed for these drills, crew members that finish their portions of the drill are allowed to assist other members as needed.

WALK-THROUGH INSTRUCTIONS:

a. Use the Crawl-Walk-Run Method of Training. Start the training slowly. Correct any mistakes the crew members make as they go; do not proceed until the drill is performed correctly. After the crew members demonstrate their proficiency at a slow pace, let them do it faster. Remember, however, that safety is never sacrificed for speed. Watch carefully to ensure crew members achieve all standards for the drill.

b. Initiating cue. The section chief commands, "Prepare for action." Time will start with that command and stops when all steps have been completed.

PERFORMANCE MEASURES: The performance measures are done in the sequence outlined. All crew members do their task in the sequence outlined. Crew members may assist other crew members upon completion of their assigned tasks.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
1. Maneuvers the TCS truck to a designated position and orients the EPU at marker stake, as directed by CM 2	1. Directs and orients CM 1 to properly position the TCS truck with EPU at the designated marker stake.	1. Assists as needed.	1. Assists as needed.

Note**:** For evaluation purposes the time starts when the EPU rolls over the marker stake.

WARNING

The EPU should be separated from the TCS by the maximum distance permitted by cable length and site geography. This will reduce the risk of fire, carbon monoxide poisoning and noise hazard. EPU personnel will wear earplugs to prevent hearing loss.

WARNING

Hot exhaust may cause fires. Do <u>not</u> park the EPU close to trees, other plant life, or flammable objects.

WARNING

To prevent injury or vehicle damage, ensure that vehicle wheels are chocked. Do <u>not</u> get directly in front of or in back of the vehicle <u>until</u> the wheels are chocked.

a. Halts vehicle when directed by CM 2 and sets hand brake. b. Sets the truck shift lever to neutral and leaves engine running and remains in vehicle.	a. Commands, “Halt vehicle.”	a. Emplaces TCS wheel chocks.	a. Emplaces TCS wheel chocks.

Note: The EPU maximum allowable slope from front to rear, or side-to-side is 10 degrees.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING
Ensure EPU trailer hand brakes are set and landing gear is deployed before uncoupling trailer from vehicle.

2. Confirms with CM 2 that EPU trailer has been chocked before moving the TCS.	2. Assists as required.	2. Assists EPU operator (CM 4) chock and disconnect EPU.	2. Chocks and disconnects EPU from TCS.
		a. Assists CM 4 set hand brakes, lowers landing leg and disconnects intervehicular light cable	a. Lowers landing leg. Sets hand brakes and disconnects intervehicular light cable.
		b. Assists CM 4 disconnect service and emergency air brake lines after turning off air.	b. Disconnects service and emergency air brake lines after turning off air.
	c. Removes TCS chocks.	c. Assists as required.	c. Disconnects safety chains.
d. Drives the TCS ahead as per CM 2's instructions.	d. Directs TCS driver (CM 1) to move ahead several feet. Commands, "Halt vehicle."		
e. Prepares for movement to TCS site.			

Note: The TCS vehicle must be approximately level for expansion or retraction.

WARNING
Remove and place fuel cans and fire extinguisher on the ground between the EPUs before generator is operated.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
3. Maneuvers the TCS truck to a designated position and orients at marker stake, as directed. a. Halts vehicle and sets the truck hand brake. b. Sets the truck shift lever to neutral and leaves engine running if DC power is required.	3. Directs and orients CM 1 to properly position the TCS truck at designated marker stake. a. Commands, "Halt vehicle."	3. Assists as needed.	3. Emplaces ground rod assembly (if not previously emplaced). a. Retrieves ground cable assembly and ground EPU.

WARNING
Do <u>not</u> exit vehicle until wheels are chocked. Injury may occur.

DANGER
High voltage may cause death or severe injury. Be sure to ground EPU and TCS <u>before</u> starting.

DANGER
Hazardous electrical voltages exist within the system. Do <u>not</u> connect or <u>remove</u> electrical cables while power is on. Serious electrical shock, burns, or death may result.

4. When notified by CM 2 that truck wheels are chocked, exits vehicle.	4. Chocks TCS truck wheels. a. Notifies CM 1 that truck wheels are chocked.	4. Emplaces ground rod assembly (if not previously emplaced). a. Retrieves ground cable assembly and ground TCS.	4. Assists as needed.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
5. Opens environmental control unit (ECU) vent.	5. Assists as needed.	5. Removes ladders from rear of TCS shelter and installs. a. Releases retaining handle and positions ladder in pintles. b. Secures ladder-retaining pins.	5. Assists as needed.
6. Removes power cable reel cover and assists CM 4 to unreel and pull power cable to EPU.	6. Removes roadside and curbside front and rear locking handles and disengages handles from retaining bracket.	6. Assists as needed.	6. Assists as needed.
7. Connects power cable to TCS.	7. Opens and secures left rear door, removes lock and ratchet wrenches.	7. Assists as needed.	7. Connects power cable to EPU. 8. Performs “before” operations PMCS of generator.

WARNING

Inform all crew members of generator power up. Ensure all TCS crew members use hearing protection <u>before</u> starting EPU.

9. Moves to rear of roadside panel, pulls panel outward, and opens end panel past 90 degrees and secures with side lock rod.	9. Releases left ratchet, ratchet ccw, and expands roadside panel fully out.	9. Moves to front of roadside panel, pulls panel outward and opens end panel past 90 degrees and secures with side lock rod.	9. Starts EPU.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

DANGER

Crew members must support raised floor panel when operator turns hinged roof lock panel. Floor panel may fall, resulting in injury or death.

10. Enters shelter. Lowers floor panel and raises roof panel into position. Supports with swivel roof hooks.	10. Unlocks floor panel.	10. Supports floor panel. Clears area under floor when CM 1 is ready to lower floor panel.	10. Waits 5 minutes for generator warm up.
11. Releases side lock rod, closes (pull in) front-end panel 90 degrees and slides end panel bolt into corner post.	11. Cranks in roadside panel so CM 1 can attach and secure swivel eye onto toggle clamp.	11. Releases side lock rod, closes (pull in) rear end panel 90 degrees and slides end panel bolt into corner post.	11. Informs crew and closes AC circuit breaker.
12. Releases side lock rod, closes (pull in) rear end panel 90 degrees and slides end panel bolt into corner post.	12. Installs front retaining bar and secures.	12. Installs rear retaining bar and secures.	12. Secures and sets up TIBS antenna. Secures 26 pair cable. Attaches to the roadside rear of the ICC and curbside middle of TCS.

Notes:

- CMs 1, 2, and 3 repeat steps 8 through 11 for curbside panel.
- If TADIL-A antenna is to be used, perform steps outlined in Appendix K.

13. Enters shelter. Ensures ABC indicator light is on and BAC is off. Opens AC PDB, sets MAIN shelter AC CB to on, and sets remaining CB to on. Performs shelter interior ambient temperature readings, determines heat/cool requirements and sets switches to appropriate positions.	13. Assists as needed.	13. Secures fiber optic cable reel. Positions and installs fiber optic cable.	13. Enters shelter. Opens safe, removes laptop, and three secure hard drives. Installs laptop.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
14. Positions and installs UHF voice equipment.	14. Assists CM 1.	14. Assists as needed.	14. Assists as needed.
15. Removes from storage five 838 phones, five DNVT phones, and two keyboards, sets in place and connects as required.	15. Exits shelter. Shuts off TCS truck and drains air tanks.	15. Moves and secures chair/rifle rack to rear wall, positions and secures radio operator table, releases and lowers both roadside and curbside wing tables.	15. Sets UPS CB 1 and 2 to on, verifies that fan comes on and observes four green indicator lights. Depresses OUTPUT ON switch to on. Verifies LOAD indicator light is green.
16. Ensures power strip light on forward wall is red and both printers are on; observes indicator lights are lit.	16. Assists as required.	16. Assists as required.	16. Sets POWER 1 and 2 switches on the ECA to on, observes both indicator lights come on.
17. Assists as needed.			17. Sets both CHS monitors to on, observes POWER indicator lights go green.
18. Assists as needed.			18. Sets both curbside and roadside CHS computers to ON, observes both power on indicator lights go green. Depresses PWR switch on both keyboards to ON and allows 3 to 5 minutes for initialization. Observes that DII COE LOGIN appears first on the primary monitor, types in name and password, and observes the second monitor. Performs AMDWS login procedures, observes POP-UP menus on monitors, and takes actions as required.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
19. Assists as needed.			19. Sets communication processor and VME rack POWER-ON/STANDBY switches to STANDBY. Verifies hard drives are installed, sets POWER-ON/STANDBY switch to on and verifies indicator light goes green. Allows 3 to 5 minutes for activation, observes and performs POP-UP menu actions as required.
20. Assists as needed.			20. On A22 (CTT/HR) verifies power ON/OFF switch to off and DSBL test lamp switch is CENTERED. Sets power ON/OFF switch to on, observes PWR indicator light is lit and INIT-BIT RUNNING appears across the screen.

Note: If BIT FAIL appears within 30 seconds, perform power off and on procedures until BIT PASS appears on the screen.

21. Assists as needed.			21. Performs SDBL lamp test ON/OFF and verifies indicator lights are on or off as required. Moves to TADIL-A rack assembly.
22. Assists as needed.			22. Sets power ON/OFF switches on DLDC (A 43), DTS, and POWER switch on CCS to ON. Verifies key generator label reads serial. Starting from left to right sets all CB (except last CB) on PCU to on. Observes CCS display screen for SELF TEST OK.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

23. Reports to OIC that system is ready for action.

Notes:

- Time stops with performance of step 22.
- Crew will inform TD that TCS is prepared for TABULAR/OSLB data buffer transfer to the ICC and fire units. OSLB download to fire units will be used for passive emplacement.

COACHING POINT: The performance measures are done in the sequence outlined. All crew members do their like-numbered tasks at the same time. When all the individual tasks have been mastered and all crew members can do their jobs without coaching, go for speed and remember to be safety-conscious. The more the drill is performed, the better the crew members will perform together.

RUN-THROUGH INSTRUCTIONS: The crew members should practice this drill until they can perform the drill according to the standard without using the drill book. The initial run-through should be conducted slowly. The crew members should change positions in order to learn all steps and standards.

PERFORM: When the crew members can perform this crew drill to standards, inform the platoon sergeant or platoon leader that the crew members are ready to be evaluated.

SUPPORTED T&EOS

ARTEP NUMBER	T&EO NUMBER	T&EO TASK TITLE
44-635-MTP	44-4-9044	Perform Emplacement

2-7. Crew Drill 44-5-D022.

TASK: March Order and Prepare the Patriot TCS, Tactical Command System for Movement (44-5-D022).

CONDITIONS: The Patriot TCS system is in an emplaced configuration. The section chief commands, “March order.”

STANDARD: March order the system in sequence according to the performance measures within 45 minutes, when in a training environment.

Note: The time required to perform this drill in MOPP4 will increase per ARTEP 44-637-30-MTP, Figures 5-1 and 5-2.

SUPPORTING INDIVIDUAL TASKS: Supporting individual tasks for these drills are listed in Appendix A, Individual Task-to-Drill Matrix.

ILLUSTRATIONS: None

SETUP INSTRUCTIONS: The following equipment, areas, and personnel must be provided for the drill to be trained correctly:

a. Resources. As a minimum, the following are required:

(1) Patriot Tactical Command System.

(2) M934 truck, 6X6, truck, van, expandable, 5-ton.

(3) Generator set, diesel, 30-kilowatt, trailer-mounted.

(4) TIBS antenna group.

(5) TADIL-A antenna group, 2 each.

(6) A designated manning crew.

(7) Individual weapons, NBC protective clothing, and equipment.

b. Training Site. The location may be either an initial ready site or a field site.

c. Unit Instructions. From an operational mode, place the system in a march order configuration in preparation for movement to a new location designated by the section chief.

TALK-THROUGH INSTRUCTIONS: The objective of the TCS system crew drills is to prepare the system for march order as rapidly as possible, with no safety violations.

a. Orientation. Before beginning drill training, ensure that each crew member knows the purpose of the drills and is briefed on all safety requirements found in each system TM.

b. Safety/Fratricide. All crew members that operate the TCS system must know that safety hazards exist while operating various items of equipment. These hazards can and have caused both death and severe injuries to operators. Some of the hazards present are—

(1) Burn injury.

(2) Heat injury.

(3) High voltage.

(4) Hydraulic pressure.

(5) Lifting injury.

(6) Mechanical.

(7) Noise.

(8) Vehicle.

(9) Chemical.

(10) Carbon Monoxide.

To prevent injury or death, every crew member must know which safety hazards exist and how to avoid them. Accidents occur primarily because personnel are not aware of potential safety hazards or because they are careless. All notes, cautions, warnings, and dangers found in each TM are valid and apply throughout the conduct of the drills within this booklet.

These drills are designed to prepare each TCS system for march order as quickly as possible. However, safety is never sacrificed for speed.

c. Demonstration. If another crew has successfully performed the drill, have that crew demonstrate the drill. Describe their actions using the performance measures as a guide. After the demonstration, summarize.

d. Explanation. Explain the drill in the following manner:

(1) Tell crew members what their duties are in the drill.
(2) Read the performance measures of the drill to the crew members.

(3) Ask crew members to explain their roles in the drill, including the performance measures, to ensure that they understand them.

(4) Due to various equipment configurations, crew abilities, and the time allowed for these drills, crew members that finish their portions of the drill are allowed to assist other members as needed.

WALK-THROUGH INSTRUCTIONS:

a. Use the Crawl-Walk-Run Method of Training. Start the training slowly. Correct any mistakes the crew members make as they go; do not proceed until the drill is performed correctly. After the crew members demonstrate their proficiency at a slow pace, let them do it faster. Remember, however, that safety is never sacrificed for speed. Watch carefully to ensure crew members achieve all standards for the drill.

b. Initiating Cue. The section chief commands, "March order." Time will start with that command and stops when all steps have been completed.

PERFORMANCE MEASURES: The performance measures are done in the sequence outlined. All crew members do their task in the sequence outlined. Crew members may assist other crew members upon completion of their assigned tasks.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
1. Receives and confirms march order. Notifies battle captain of march order command.	1. Notifies ICC of march order over party line or FM.	1. Exits shelter.	1. Exits shelter.
Commands, “March order.”	NOTE: Time starts at the command, “March order.”		
2. Assists CM 2.	2. Using laptop, performs TIBS power-down procedures.	2. Removes phone lines running to ICC and TCS GCFU.	2. Starts TCS truck.
	3. Performs CTT/HR power down procedures.		3. Assists as required.
	4. Performs laptop shutdown procedures, ensures indicator light goes off, and disconnects power cable.		
	5. Performs communication processor shutdown procedures. Sets POWER ON/STANDBY switch to STANDBY; verifies ON indicator goes off.		
	6. Sets VME POWER ON/STANDBY switch to STANDBY; verifies ON indicator switch goes off.		

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
7. Assist as required.	7. Performs shutdown procedures on the primary and secondary workstations, sets curbside and roadside CHS computer POWER ON/STANDBY switches to STANDBY, verifies indicator light goes off. 8. Sets POWER 1 and 2 switches on the ECA to off. Verifies both indicator switch lights are off. 9. Sets UPS CB 1 and 2 to OFF. Verifies fan is off, four indicator lights are off, and LOAD indicator light is off.	7. Assists as required.	7. Assists as required.
10. Powers down the environmental control unit.	10. Sets power ON/OFF switches on the TDLC, DTS, and power switch on CCS to OFF. Starting right to left, sets all CB on PCU to OFF.		

WARNING

Use hearing protection <u>before</u> power down. Failure to do so may cause hearing loss.

11. Sets all circuit breakers in AC PDB to OFF.	11. Removes three secure disks from workstation 1 and 2 and communications processor.	11. Goes to EPU and prepares for power down.

Stores disks in safe.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
12. Informs CMs 3 and 4 of TCS power down.	12. Covers roadside, curbside monitors, disconnects keyboard and stores.	12. Disconnects and retrieves TIBS cables, pre-amp box and antenna. Places at rear entrance of TCS.	12. When notified, opens AC circuit breaker and waits 5 minutes for cool down.
13. Disconnects and stores DNVT phones and chairs. Secures chair/weapons rack, RTO table, and wing tables.	13. Assists CM 3.	13. Disconnects, retrieves and stores on reels the fiber optic and 26 pair cables, moves reels to rear entrance of TCS.	

WARNING
Shock hazard exists. EPU must be shut down before cables are removed.

Note: Allow 5 minutes for generator to cool down.

14. Removes power cable from TCS and assists CM 4 in reeling cable.	14. Moves to roadside exterior rear of TCS. Disengages and secures side lock rods at roadside rear and front of van.	14. Moves to curbside exterior rear of TCS. Disengages and secures side lock rods at curbside rear and front of van.	14. Powers down EPU. Removes power cable once EPU is powered down and reels up power cable.

Note: If TADIL-A antenna was employed, breakdown and retrieve now per Appendix L.

15. Enters TCS. Releases and unhooks six toggle clamps. Stands in center rear of shelter.	15. Removes lock and ratchet wrenches, releases right ratchet, ratchet cw and expands curbside panel fully out.	15. Moves to curbside front, pulls out and secures forward end panel.	15. Moves to curbside rear, pulls out and secures forward end panel.
16. Lowers hinged roof. Secures three toggle clamps.	16. Locks floor panel.	16. Pushes up on hinged floor. Aligns and holds floor to roof until CM 2 can secure.	16. Pushes up on hinged floor. Aligns and holds floor to roof until CM 2 can secure.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
17. Assists as required.	17. Assists CMs 3 and 4 with collapsing sides.	17. Pushes in and secures expanded side. Replaces side lock rod at curbside front of TCS.	17. Pushes in and secures expanded side. Replaces side lock rod at curbside rear of TCS.
Note: Repeat steps 15 through 17 for roadside of TCS.			
18. Closes ECU vent, exits shelter and enters vehicle cab.	18. Closes rear doors and removes and secures boarding ladders.	18. Assists CM 2 with ladders.	18. Proceeds to the EPU. Closes vents and prepares for road march.
	19. Removes chock blocks from TCS curbside.	19. Removes chock blocks from TCS curbside.	
20. Performs TCS vehicular safety checks.	20. Performs TCS vehicular safety checks from the front of the vehicle.	20. Performs TCS vehicular safety checks from the rear of the vehicle.	
21. Maneuvers the TCS to hook up the EPU trailer.	21. Coordinates with CM 4 to maneuver TCS to hook up EPU.	21. Assists as required.	21. Assists CM 2 with guiding TCS to EPU trailer.
22. Places transmission in neutral, sets brake and remains in vehicle.			
	23. Hooks up EPU onto the TCS pintle. a. Lifts EPU onto pintle. b. Stows landing leg.	23. Assists CM 2 and 4 as required.	23. Hooks up EPU onto the TCS pintle. a. Lifts EPU onto pintle. b. Stows landing leg.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	c. Attaches air hoses to TCS.		c. Attaches intervehicular light cable to the TCS.
	d. Attaches towing chains to the TCS.		
	e. Releases trailer brakes and stows EPU chock blocks.		e. Releases trailer brakes and stows EPU chock blocks.
24. Performs EPU safety checks.	24. Performs EPU safety checks.	24. Performs EPU safety checks.	24. Performs EPU safety checks.
	25. Removes roadside chock block from TCS.	25. Removes curbside chock block from TCS.	25. Assists as needed.
26. Proceeds with road march plans.	26. Ground guides the TCS.		

Note: For evaluation purposes times stops now.

COACHING POINT: The performance measures are done in the sequence outlined. All crew members do their like-numbered tasks at the same time. When all the individual tasks have been mastered and all crew members can do their jobs without coaching, go for speed and remember to be safety-conscious. The more the drill is performed, the better the crew members will perform together.

RUN-THROUGH INSTRUCTIONS: The crew members should practice this drill until they can perform the drill according to the standard without using the drill book. The initial run-through should be conducted slowly. The crew members should change positions in order to learn all steps and standards.

PERFORM: When the crew members can perform this crew drill to standards, inform the platoon sergeant or platoon leader that the crew members are ready to be evaluated.

SUPPORTED T&EOS

ARTEP NUMBER	T&EO NUMBER	T&EO TASK TITLE
44-635-MTP	44-4-9044	Perform March Order

APPENDIX A

INDIVIDUAL TASK-TO-DRILL MATRIX

A-1. General. The following matrixes identify individual tasks from STP 44-14E-SM, 44-14E25-SM-TG, which support each ICC, CRG and AMG crew drill. A “B” or a “D” in the column below the drill indicates individual tasks that support a drill. A "B" indicates tasks that are trained before the drill, and a "D" indicates tasks that are trained during the drill.

Individual Task Number and Soldier Manual Task Title	44-5-D005 Emplace the ICC with EPU for Tactical Operations	44-5-D006 Emplace the CRG, AMG with EPU for Tactical Operations	44-5-D007 Prepare the ICC with EPU for Road March	44-5-D008 Prepare the CRG, AMG with EPU for Road March
441-084-1405 Perform ICC Emplacement	D			
441-084-1409 Perform ICC Initialization	D			
441-083-1472 Activate the ICC	D			
441-083-1475 Deactivate the ICC			D	
441-084-1417 Perform ICC March Order			D	
551-721-1364 Drive Vehicle with Auto/Semiautomatic Transmission	B	B	B	B

This matrix identifies individual crew member tasks from STP 44-14J14-SM -TG. The individual tasks, which support the drill, are indicated by a "B" or "D" in the column below the drill. A "B" indicates tasks trained before the drill, and "D" indicates task trained during the drill.

Individual Task Number and Task Title	44-5-D021 Emplacement of the TCS	44-5-D022 March Order the TCS
COMMUNICATIONS		
113-571-1004 Operate in Radio Nets	B	
113-620-2026 Operate Radio Set AN/GRC-213	D	
AMDPCS COMMUNICATIONS		
441-096-1098 Operate the Single Channel SATCOM Radio	B	
441-096-1100 Initialize the ARC-187 for Data or Voice Operations	B	
MSE OPERATIONS		
113-625-2080 Operate digital Non-secure Voice Telephone (DNVT) TA-1035/A	B	
113-625-2081 Operate Digital Secure Voice Terminal (DSVT) KY-68	B	
GENERATORS		
441-096-1077 Operate Generator Set 30 KW	B	
GPS OPERATIONS		
441-096-1122 Operate the PLGR (GPS)	B	

Individual Task Number and Task Title	44-5-D021 Emplacement of the TCS	44-5-D022 March Order the TCS
EMPLACEMENT		
441-096-1056 Perform Operator Duties During Emplacement of the AMDPCS	D	
441-096-1057 Perform Operator Duties During Emplacement of the M934 Expandable Van TCS	D	
441-096-1058 Emplace Satellite Communication Antennas	D	
441-096-1129 Power up the AMDPCS Equipment	B	
441-096-1130 Emplace the TADIL-A Antennas	B	
MARCH ORDER		
441-096-1012 Stow the Engagement Operations/Force Operations Common Hardware		B
441-096-1096 Perform Operator Duties During March Order of the AMDPCS		D
441-096-1097 Perform Operator Duties During March Order of the M934 Expandable Van TCS		D
441-096-1141 March Order the TADIL-A Antenna		B
ADSI OPERATIONS		
441-096-1131 Perform ADSI Site Initialization	B	
441-096-1132 Establish ADSI Operational Modes	B	
441-096-1133 Perform ADSI Map Generation	B	
441-096-1134 Set Data Link Filter Parameters	B	
441-096-1143 Initialize Software on the AMDWS	B	
441-096-1144 Perform AMDWS Map Generation	B	
441-096-1145 Perform AMDWS Overlay Functions	B	
441-096-1149 Display Air Picture and Hook Information	D	

Individual Task Number and Task Title	**44-5-D021** Emplacement of the TCS	**44-5-D022** March Order the TCS
TACTICAL COMMAND SYSTEM (TCS)		
441-096-1111 Power Up the CTT/HR	B	
441-096-1147 Perform Patch Panel Operations	B	
441-096-1153 Power Up the Patriot Tactical Planner Workstation (TPW)	B	
441-096-1155 Initialize the TCS Communications Processor (BCP)	B	
441-096-1156 Initialize the CTT/HR	B	
441-096-1157 Transfer Initialization Parameters to the ICC, BCP, and CTT/HR	B	
441-096-1158 Load Crypto keys Into the CTT/HR	B	
441-096-1159 Generate OSLB and ISLB Data	B	
441-096-1163 Generate or Modify Control measures on the TPW	B	
441-096-1168 Display Air picture and Hook Information from ICC and SIS	B	
441-096-1169 Send and Receive TAB and PTR Messages	B	
441-096-1171 Perform Utility Functions on the TPW	B	

APPENDIX B

ILLUSTRATIONS

B-1. Visual Signals. This section describes various arm-and-hand signals and flashlight signals used by Patriot crew members. Visual signals should be used when audible signals may be lost due to loud equipment or vehicle noise. Visual signals are especially useful for guiding and directing Patriot crew members during emplacement, road march, and missile reload procedures.

a. Arm-and-Hand Signals. Good visibility is essential for arm-and-hand signal communications. A crew member using these signals must have line of sight with the other crew member to which signals are directed. Use flashlight signals at night. Figure B-1 shows some arm-and-hand signals. Signals illustrated with a single-headed arrow indicate the signal is not continuously repeated. However, the signals may be repeated at intervals until acknowledged or until the desired action is taken. Signals illustrated with a double-headed arrow are repeated continuously until acknowledged or until the desired action is taken. See FM 21-60 for additional visual signals.

b. Visible Flashlight Signals. Figure B-2 shows standard flashlight signals. Flashlight signals can be used to control movement when visibility is limited.

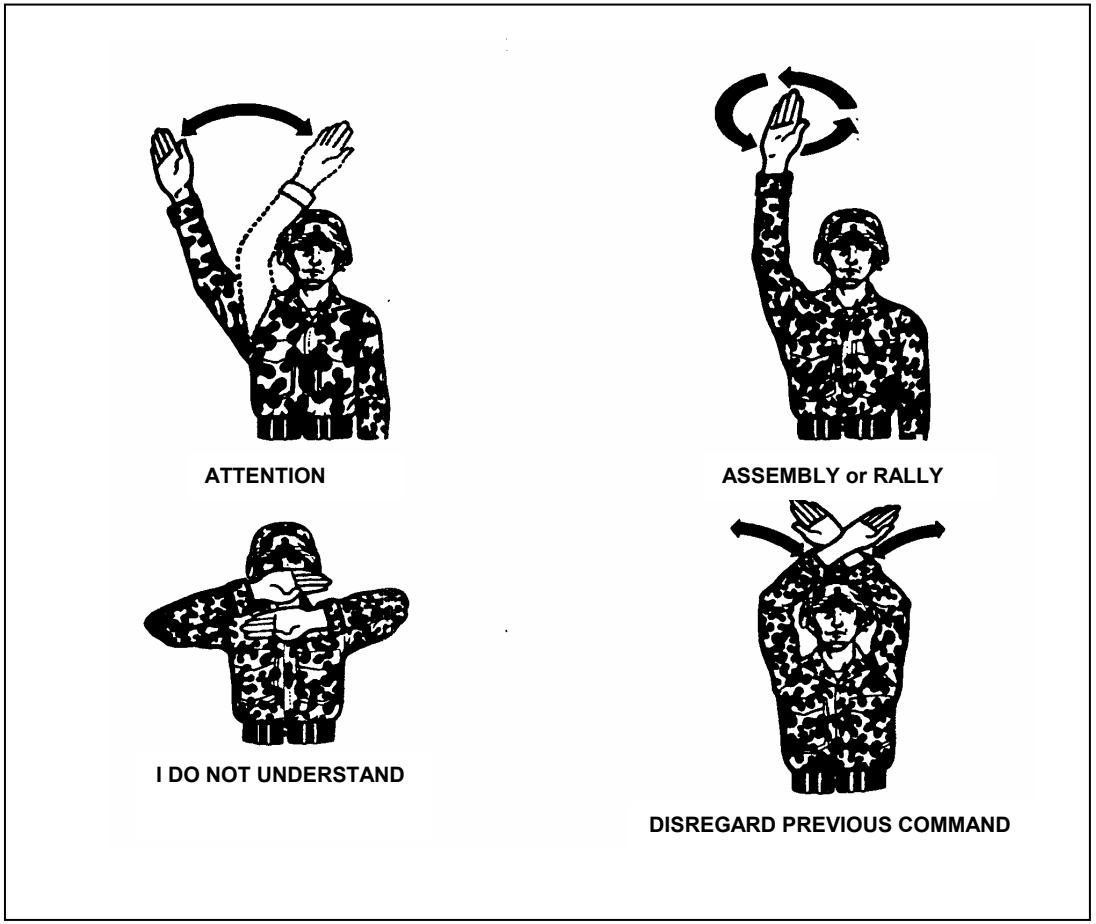

Figure B-1. Arm-and-hand signals

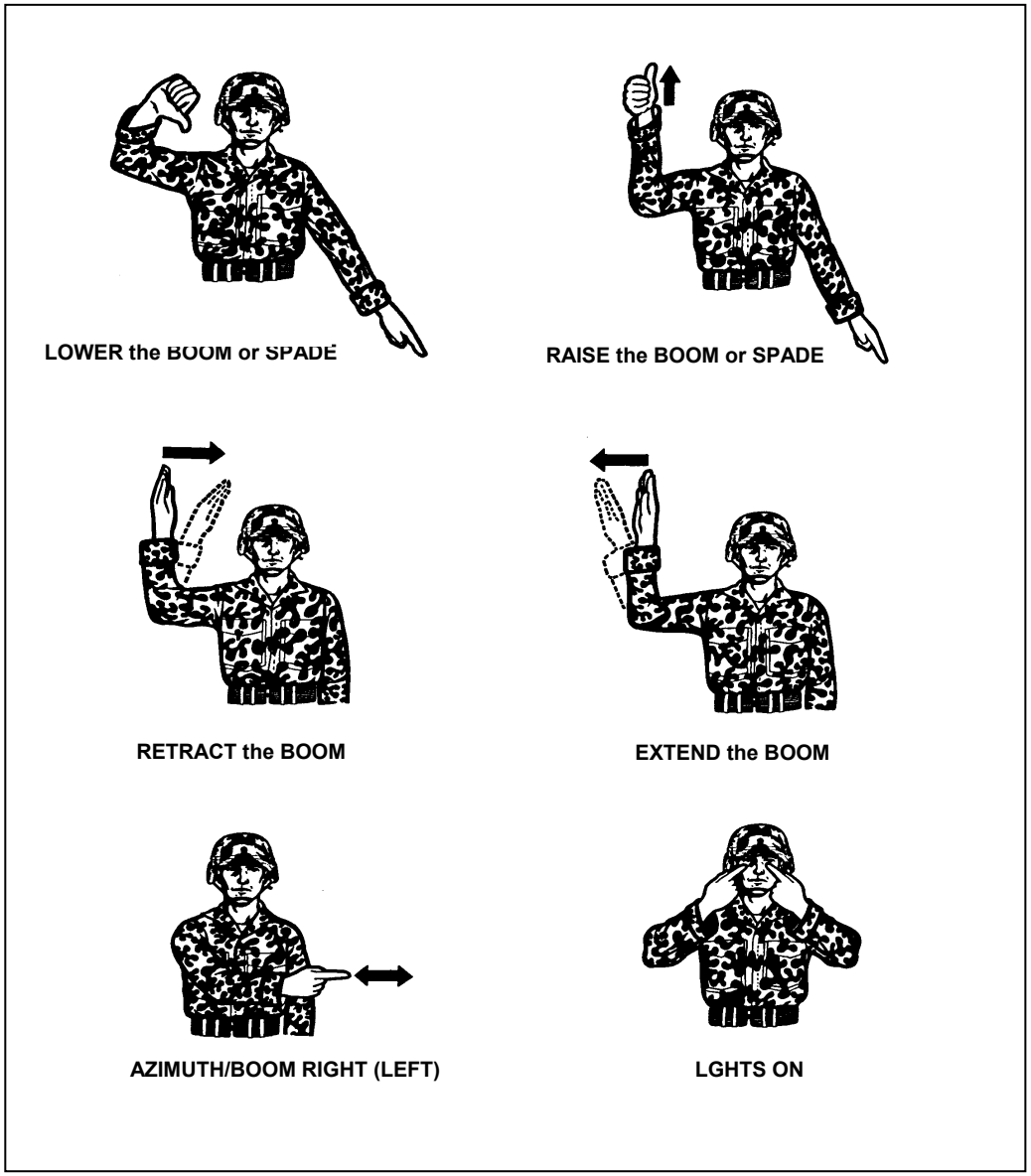

Figure B-1. Arm-and-hand signals (continued)

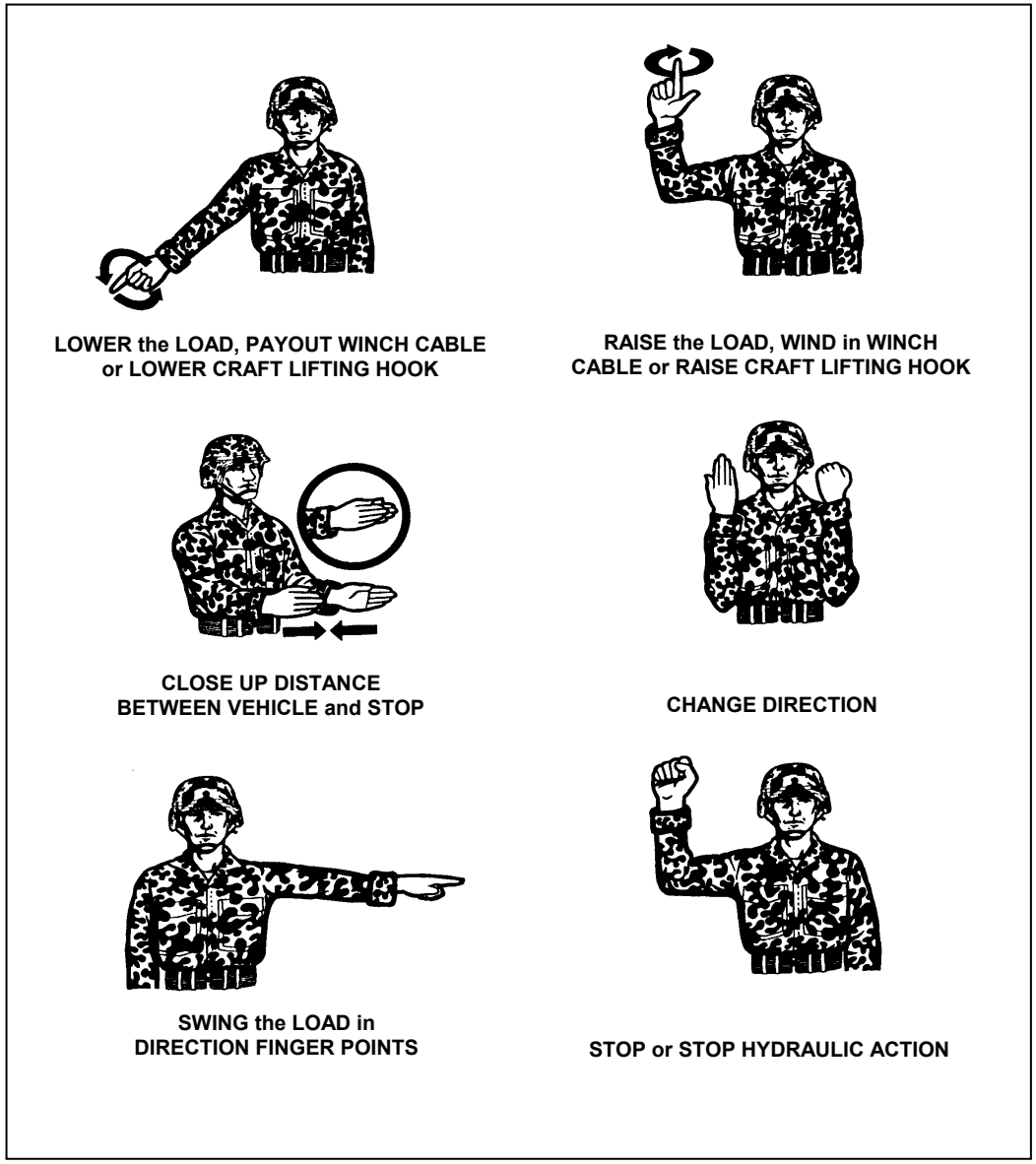

Figure B-1. Arm-and-hand signals (continued)

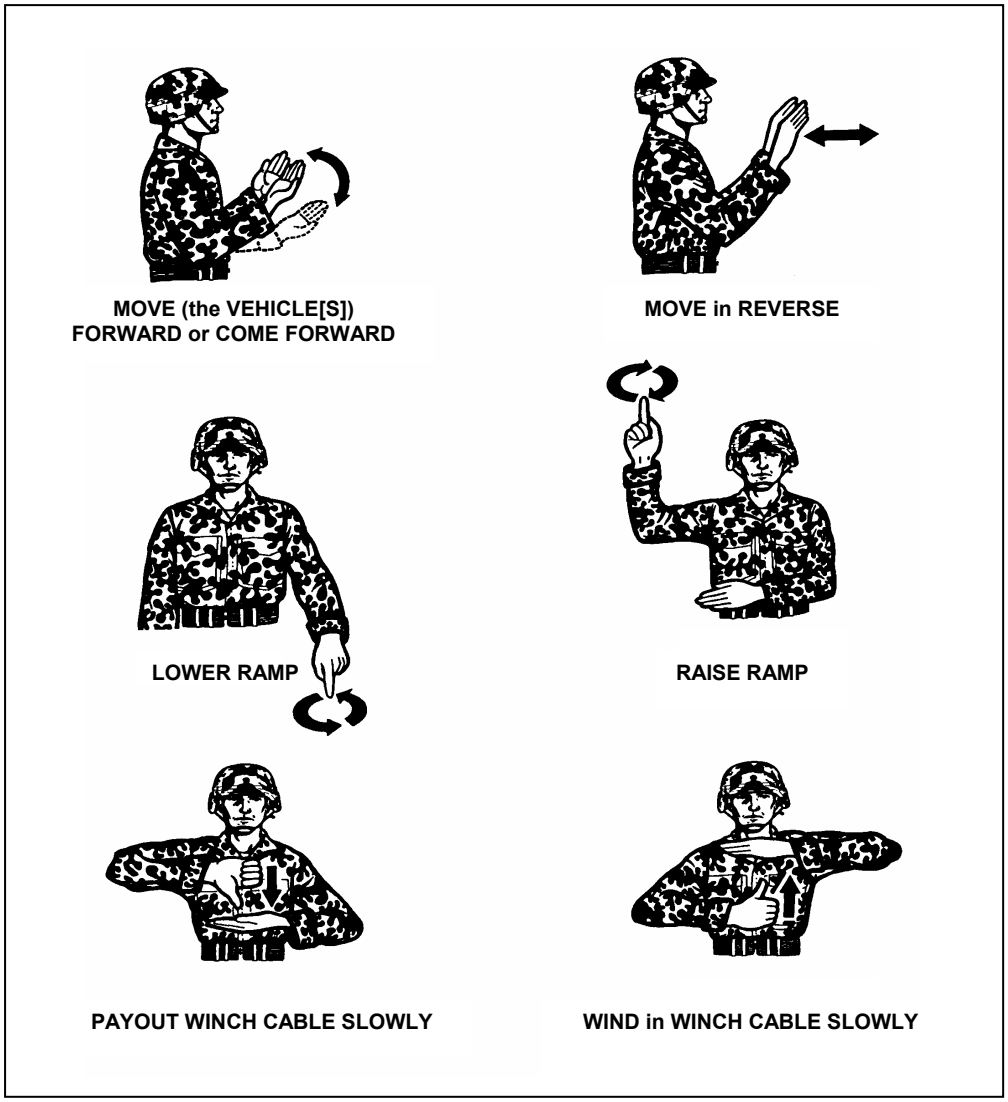

Figure B-1. Arm-and-hand signals (continued)

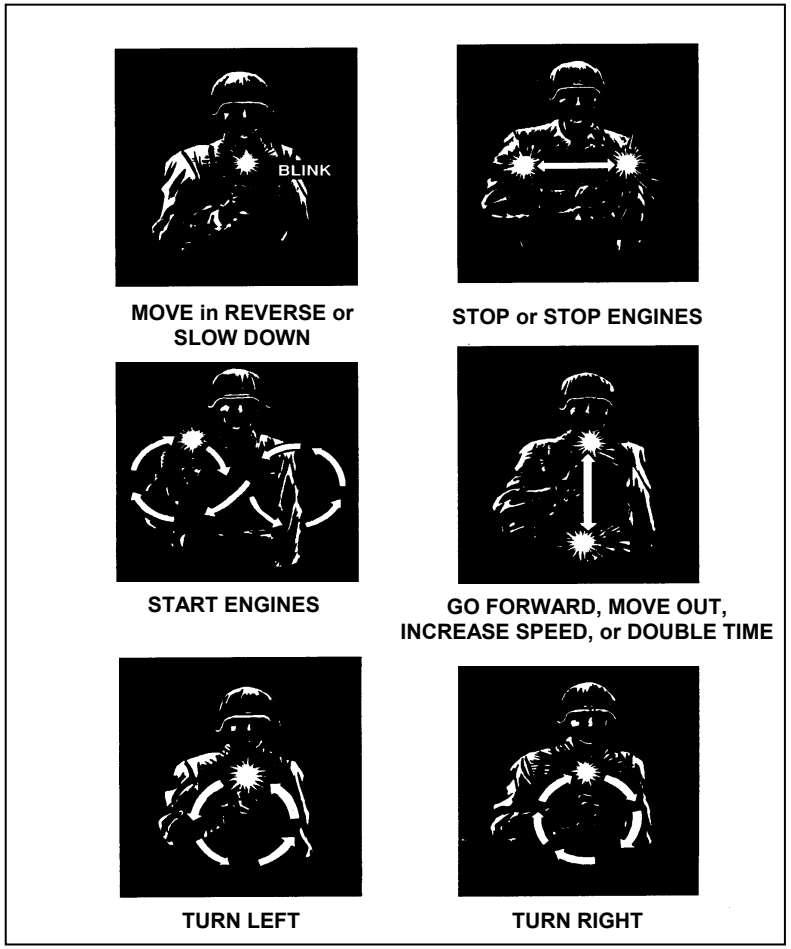

Figure B-2. Flashlight signals

B-2. Chocking. A chock is a wedge or block used for blocking the movement of a wheel. Chock blocks are stored on all wheeled vehicles. They are used to chock the wheels when the vehicle (tractor or trailer) is being emplaced or is temporarily parked and left unattended with the engine at idle. Safety is the reason for chocking vehicles. Chocking prevents damage to equipment or physical harm to individuals. Figures B-3 through B-7 illustrate the proper method for chocking the Patriot vehicles.

Notes:

- Chock block, NSN 2540-00-678-3469, rubberized triangular block is for use on 5-ton vehicles and smaller.
- Chock block, NSN 2540-01-165-6136, wood rectangular block is for use on 10-ton vehicles and semitrailers.

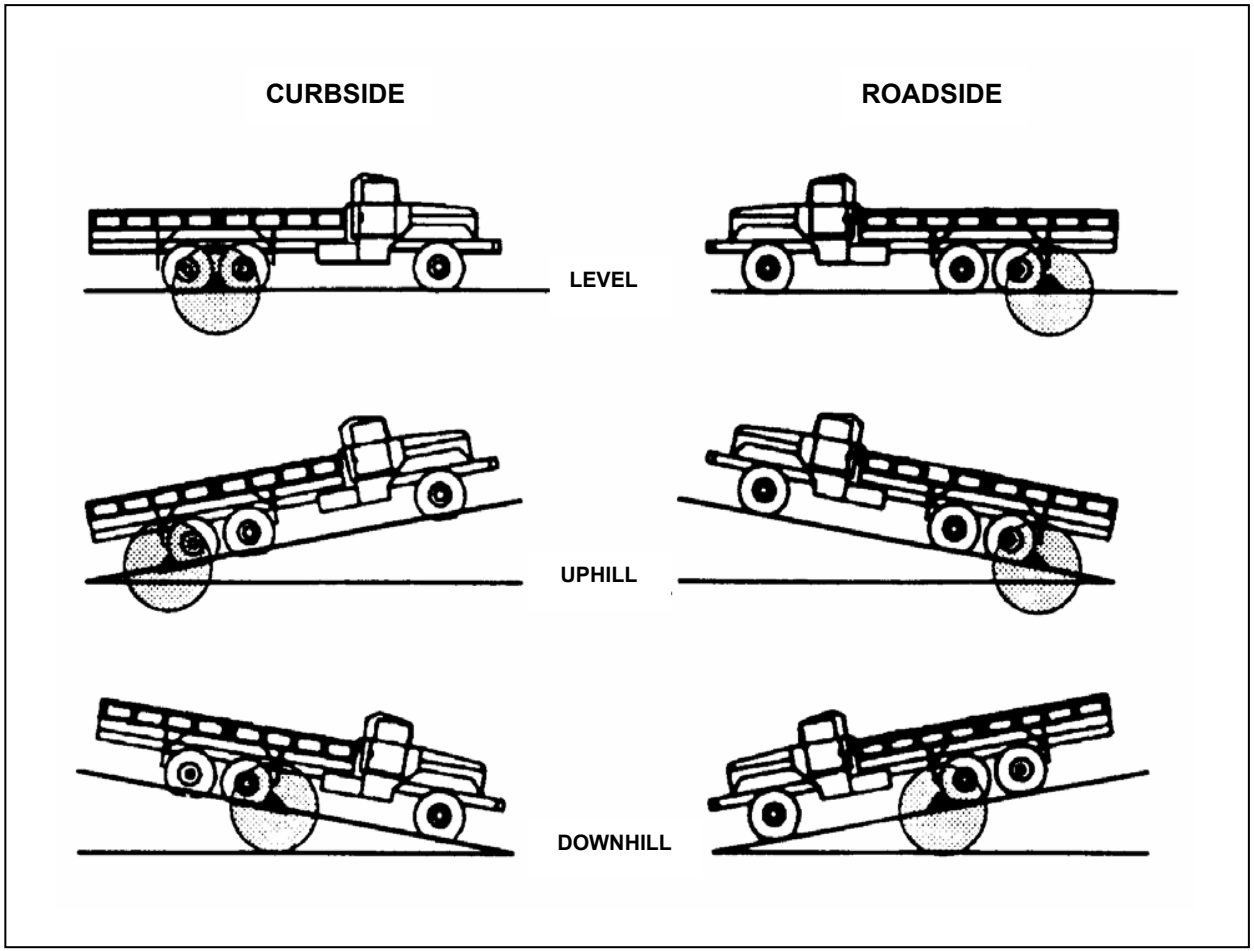

Figure B-3. Chocking the ECS, ICC, CRG, EPP, and AMG trucks

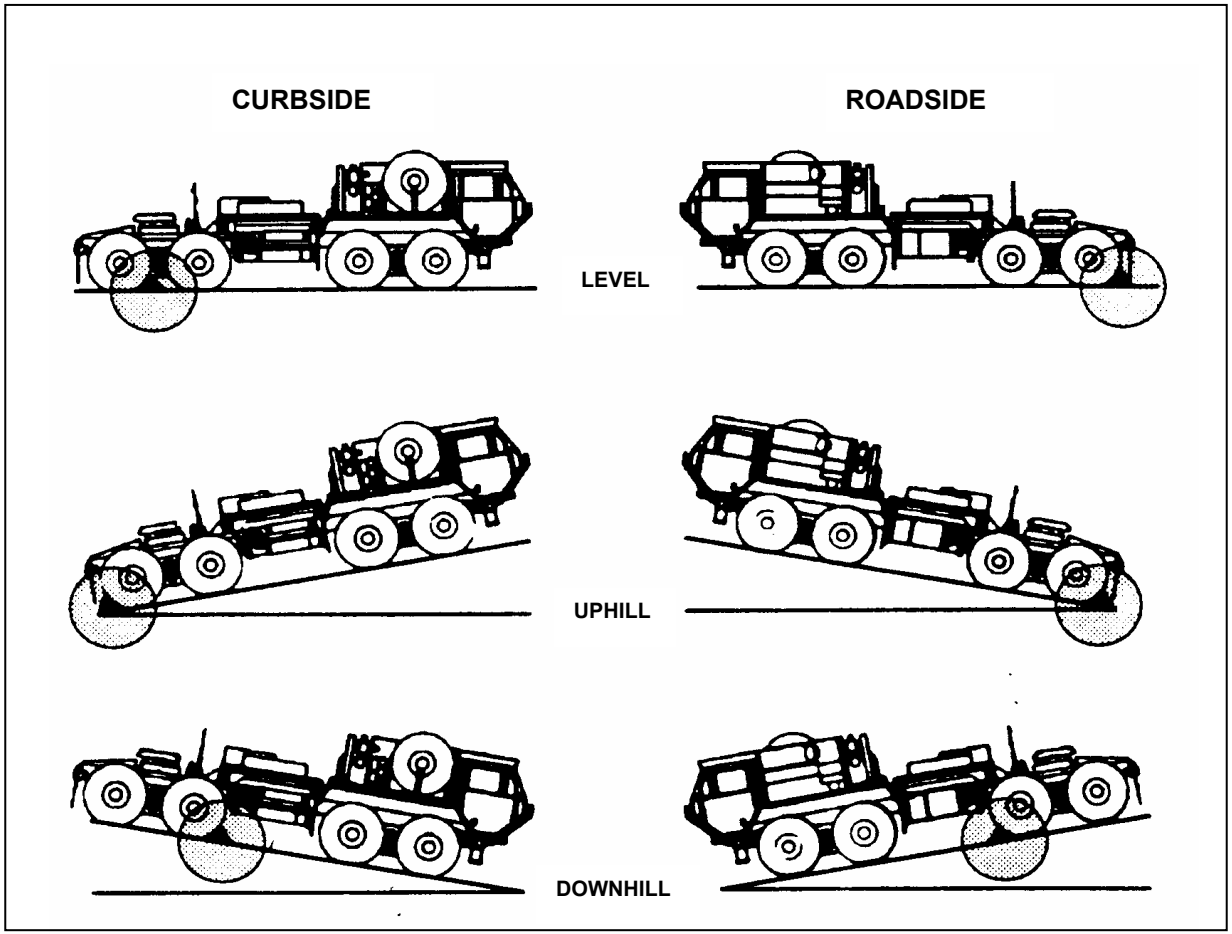

Figure B-4. Chocking the HEMTT

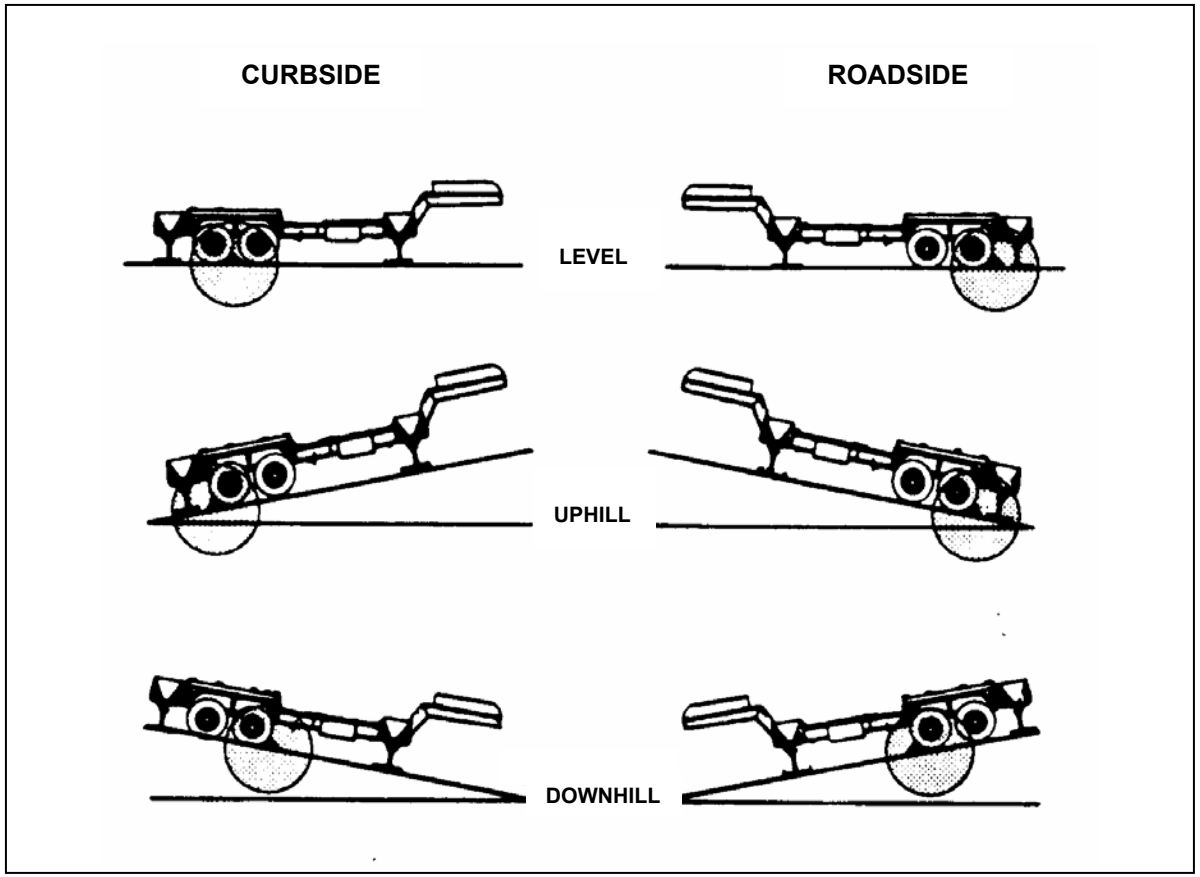

Figure B-5. Chocking the LS and RS semitrailer

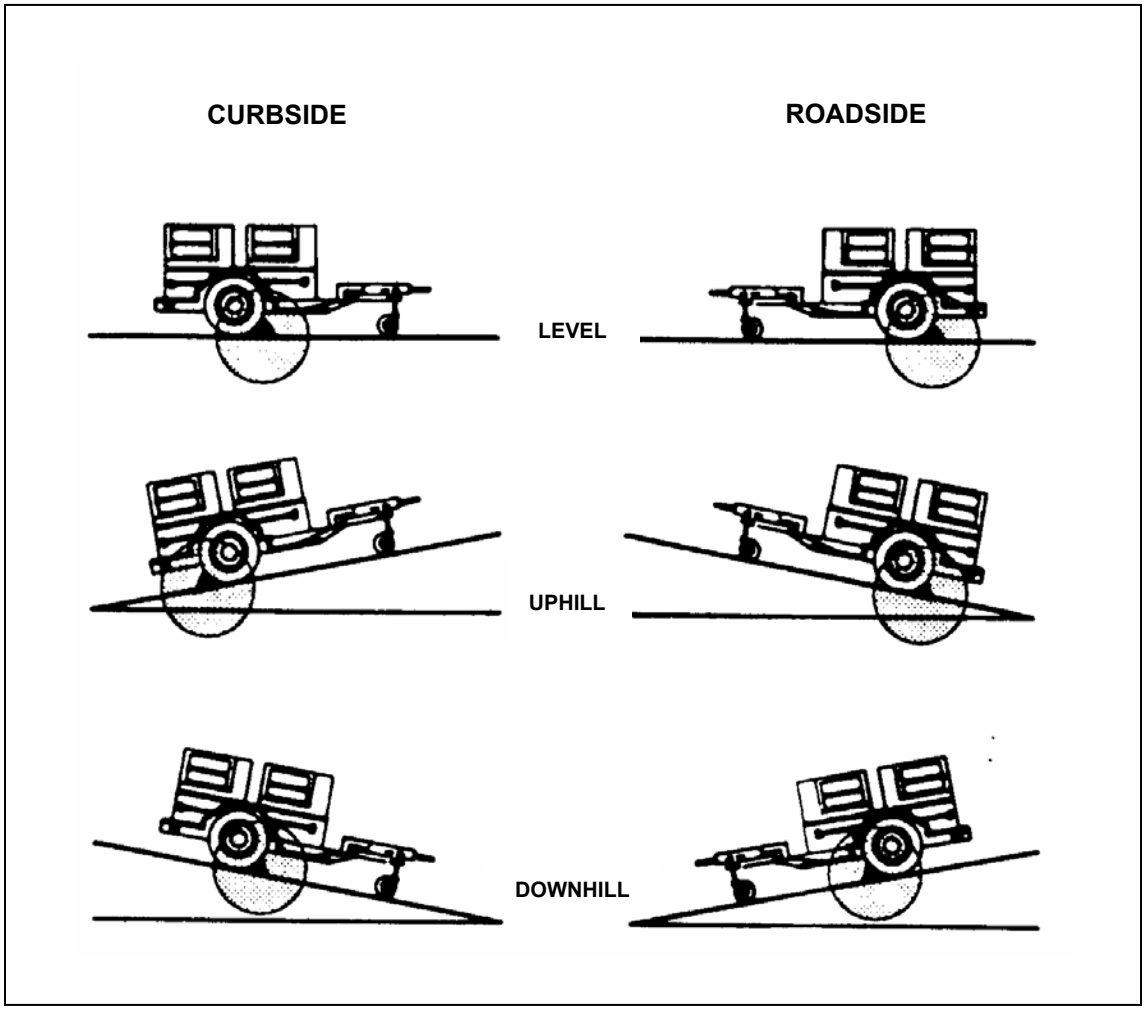

Figure B-6. Chocking the EPU trailer

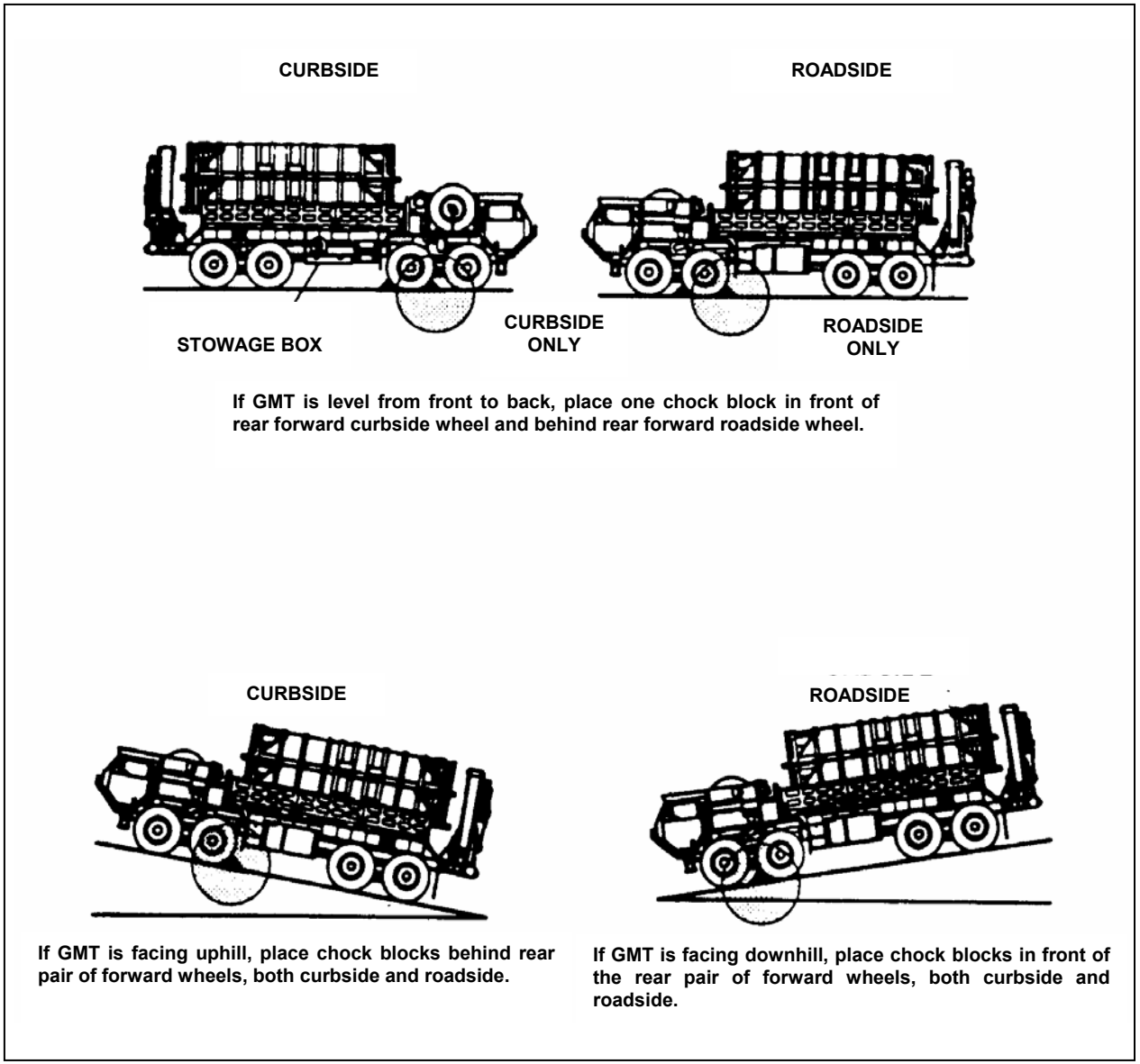

Figure B-7. Chocking the GMT

APPENDIX C

EMPLACE PROTECTIVE ENTRANCE (PE)

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Perform the following crew drill procedures when the PE A108 is to be installed during emplacement.

WARNING

The PE weighs 142 pounds. To void injury, three people are required to erect and install the PE, and three people are required to lift.

Note: Instructions are on plates on top of PE (outside) and on curbside wall (inside).

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
Note: During assembly, keeps air duct hoses free of dust and dirt.	1. At PE A108 storage rack, gets cable W100, air duct hoses, and hose adapters from storage box.	1. Helps CM 2 with equipment to install the PE.
2. Assembles 5 air duct hoses on the ground (to be used later).	2. At storage rack, releases travel lock and swings storage rack away from shelter door. Locks in position.	
	3. Releases straps and removes PE from storage rack. Sets PE down on truck bed.	3. Helps CM 2 remove the PE from storage rack and sets PE down.
	4. Aligns PE on truck bed.	4. Helps CM 2 align PE on truck bed.

Note: Ensures the electrical connector faces roadside and that carrying handles face truck bedsides.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
	5. At roadside of PE, connects W100J20 to J20 electrical connector.	
6. At top of PE, removes air inlet cap. Connects and secures one end of air duct hose to PE inlet.	6. Releases the latches that secure the PE's top and bottom shells.	6. Helps CM 2 release PE shell latches.

WARNING

Top shell is heavy. Use two people to support top shell unit <u>until</u> two rear supports are secured.

7. Stands on ladder in front of PE shelter. Helps CMs 2 and 3.	7. Stands on roadside and raises top shell until fabric walls are taut.	7. Stands on curbside and helps CM 2 with raising top shell until fabric walls are taut.
a. Opens PE door and keeps door open until doorframe detent pins are inserted.		

Note: Detent pins are inserted correctly when they protrude through frame.

b. At hinge side and latch side of doorframe interior, inserts detent pins.		
c. Extends rear supports and mates top ends with fittings in top shell. Inserts detent pin in each support.		
d. Lowers angle braces onto brackets and inserts detent pin into each bracket.		
e. Notifies CMs 2 and 3 that supports and angle braces are secured.	e. When notified by CM 1 that supports and braces are secured, lets loose of the top shell.	e. When notified by CM 1 that supports and braces are secured, lets loose of the top shell.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
8. Helps CMs 2 and 3 pull out the interface flap.	8. Together with CM 3, pulls the PE interface flap outward. Straightens it to form a rectangular opening.	8. Together with CM 2, pulls the PE interface flap outward. Straightens it to form a rectangular opening.
9. Helps CMs 2 and 3 align PE interfacing with the shelter.	9. Together with CM 3, aligns the PE interface flaps with shelter interface channels.	9. Together with CM 2, aligns the PE interface flaps with shelter interface channels.
10. Helps CMs 2 and 3 insert the interface flaps into the interface channels. Pushes flap edges to depth indicated by arrows on fabric. From interior of PE, tightens screws on inter-face channels. Notifies CMs 2 and 3 when completed.	10. With help from CMs 1 and 3, inserts the interface flaps into the interface channels. Holds until CM 1 tightens screws.	10. With help from CMs 1 and 2, inserts the interface flaps into the interface channels. Holds until CM 1 tightens screws.

Notes:

• Each air duct hose section has an arrow for airflow direction. When installing hoses, make sure arrows are pointed in direction of airflow. Keep air duct hoses free of dust and dirt.

• Airflow is from the gas particulate filter unit (GPFU) to each air conditioner unit and to the PE unit.

11. Hands CM 2 the assembled air duct hoses.	11. Takes from CM 1 the assembled air duct hoses, and connects to the hose installed in PE top inlet.	
12. Takes the loose end of the air duct and air duct hose along the roadside of shelter to the forward end of truck bed.	12. Hands CM 1 the assembled air duct hoses for connection to the CPFU tee adapter.	12. Helps CM 1 with the air duct hose assembly along roadside, and secures hose to shelter with shelter straps.
13. Climbs into forward end of truck bed and connects the air duct hose from the PE to the GPFU tee adapter.	13. Hands CM 3 the PE W100 cable.	13. Takes the PE W100 cable, lying along the roadside of shelter, away from CM 2 and hands it up to CM 1 for connection.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
14. Takes the PE W100 cable from CM 3 and connects W100 P5 to J5 at the GPFU.	14. Acquires the needed air duct hoses to connect the GPFU to each air conditioner. Hands them up to CM 1 for installation.	14. Assists as required.

DANGER

Failure of modular collective protection equipment or shelter air seals can lead to death or serious illness when operating in a CBR environment. Be sure to perform required inspections and checkout procedures after maintenance.

15. Takes the air conditioner air ducts from CM 2; connects and secures air ducts to the air conditioners and to the GPFU tee adapter.	15. Helps CM 1 with the air conditioner air ducts.	15. Assists as required.
16. Ensures the air door on the bottom of the GPFU tee adapter is closed. Removes the air inlet cap on the GPFU.	16. Verifies the PE has been properly installed before system checkout procedures are performed.	16. Assists as required.
17. Verifies PE and shelter doors are closed.		
18. At lighting control panel A71, verifies NORMAL-OFF-MAINTENANCE switch is set to NORMAL.		
19. At distribution box A66, sets GAS FILTER UNIT to ON.		
Note: Ensure air conditioners are on whenever the GPFU is on and ensure adequate pressure is available for the shelter.		

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
20. At distribution box verifies the AIR COND ROADSIDE and AIR COND CURBSIDE are on. 21. At air conditioner control panels A69 and A70, sets controls to desired operating conditions. 22. At compartment control module A48, performs the following checkout procedures: a. Sets all service circuit breakers to ON (pushes in). b. Sets POWER to ON. c. Observes MASK indicator comes on and warning horn sounds for approximately 30 seconds while shelter is being pressurized. d. Observes MASK indicator and audible horn goes off after approximately 30 seconds. e. If MASK indicator and audible horn do not go off, checks seals at all equipment panels, doors, and air ducts for air leakage per TM 3-4240-285-20&P. f. Observes DUST FAN DEFECT and CHANGE FILTER are off. Presses each indicator to ensure it lights.	20. Assists as required.	20. Assists as required.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
g. Observes that ENTRANCE-LOW and ENTRANCE-OCCUPIED are off. Presses each indicator to ensure it lights.		
23. Notifies CM 2 to enter the PE to check the system.	23. Enters the PE, closes the door, and checks the PE system. 24. At PE control panel, performs the following: a. Sets switch to RED. Dome lamp comes on red. b. Sets switch to WHITE. Dome lamp comes on white. c. Observes WARNING-LOW PRESSURE is off. Presses indicator to ensure it lights. d. Sets TIMER to 5. Observes that PURGE comes on.	23. Assist as required.
25. After being notified by CM 2, observes that ENTRANCE-OCCUPIED comes on when timer is used.	25. Enters shelter and notifies CM 1 the PE timer is set.	

Notes:

Protective entrance purge procedures, steps 26 through 32, are used to purge the shelter of contaminants after maintenance, or at anytime contamination is known or suspected to have occurred.

If time permits, perform steps 26 through 32. If time does not permit, return to step 7 of Crew Drill 44-5-D005, or step 9 of Crew Drill 44-5-D006 and continue with drill procedures.

Perform PE purge procedures as time permits.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
26. Ensures air conditioners are on.		
27. At distribution box, ensures GAS FILTER UNIT is set to ON.		27. Assists as required.
28. At compartment control module, ensures POWER is set to ON.		
29. Notifies CM 2 to open and hold the PE door. After CM 2 holds the PE door open, the ENTRANCE-LOW PRESSURE indicator comes on at the compartment control module.	29. When notified by CM 1, holds open the PE door. At PE control panel, LOW PRESSURE indicator comes on and alarm sounds.	
30. Notifies CM 2 to partially unlatch shelter door. After CM 2 unlatches the shelter door, at compartment control module, MASK indicator comes on.	30. When notified by CM 1, partially unlatches shelter door just enough for low-pressure alarm to sound.	
31. Notifies CM 2 to close shelter door. After the door is closed, the low-pressure alarm and ENTRANCE-LOW PRESSURE and MASK indicators go off.	31. When notified by CM 1, closes shelter door.	

WARNING

When entering PE, ensure LOW PRESSURE indicator is off on control panel <u>before</u> starting the five-minute timer to ensure a full five-minute purge cycle.

	32. Closes PE door. Before entering shelter, performs the 5-minute PE purge procedure.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
	a. At control panel, waits until LOW-PRESSURE indicator is off, then sets timer. b. Observes PURGE comes on. Waits until purge cycle is complete before entering the shelter.	

Notes:

- Contact the CBR officer or follow the unit SOP for air monitoring and removing the protective mask after shelter purge has been completed.
- Refer to unit SOP for use, entry, exit, and PE operating procedures.
- Set the GAS FILTER UNIT to OFF at distribution box A66 whenever use of the PE is not necessary.
- Return to step 7 of Crew Drill 44-5-D005, or step 9 of Crew Drill 44-5-D006 and continue with drill procedures after performing PE purge procedures.

APPENDIX D

EMPLACE CORNER REFLECTORS

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Perform the following crew drill procedures when a communications plan calls for the use of corner reflectors.

WARNING
To avoid injury, do not block shelter exit with open bay doors. Close door immediately after task is completed.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
1. Selects and connects UHF RRT 1, 2, and 3 (4 with CRG) for use with corner reflectors.	1. Selects and connects UHF RRT 1, 2, and 3 (4 with CRG) for use with corner reflectors.	1. Selects and connects UHF RRT 1, 2, and 3 (4 with CRG) for use with corner reflectors.
a. At distribution box, ensures that NOT SECURE PWR RRT 1, 2, and 3 (4 with CRG) are off.	a. Refers to communications plans and opens access bay doors of selected RRTs.	a. Ensures connections for RRTs to be used with corner reflectors are as shown below:

Nomenclature	RRT-1	RRT-2	RRT-3	RRT-4 (CRG)
Radio Receiver R-1329	A31	A18	A6	A124
Radio Transmitter T-983	A32	A19	A7	A125
RF cable 1 (1)	W459	W456	W453	W400
RF cable 2 (2)	W425	W426	W427	W428

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3

WARNING

Two people are required to retrieve corner reflectors. Use extreme caution in high winds.

2. Assembles and installs corner reflectors	2. Assembles and installs corner reflectors.	2. Assembles and installs corner reflectors
a. Helps CMs 2 and 3 assemble and install corner reflectors.	a. Helps CM 3 retrieve corner reflectors from storage bag in storage area.	a. Retrieves corner reflectors from storage bag in storage area, with help from CM 2.
	b. Climbs onto the ICC/CRG shelter rear, and waits for CM 3 to give you mast supports.	b. At exterior curbside of ICC/CRG, removes from storage compartment the hardware required to install corner reflectors: (1) Mast supports. (2) Mast clamps. (3) Mast rotating fixtures. (4) Antenna-to-mast adapters.
	c. Takes mast supports from CM 3 and install on mast support angle brackets and secure.	c. Gives CM 2 the mast supports to install.
		d. Removes two dipole elements, corner reflectors, and cables from storage bag.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
e. Helps CM 3 spread reflector assemblies.		e. Spreads reflector assemblies to fully open position.
f. Helps CM 3 connect the cable, dipole element, and reflector.	f. Retrieves mast sections from storage area.	f. Uses cable W463 or W464. Feeds cable through mounting socket and connects to dipole element. Connects dipole element to reflector.
g. Helps CM 3 set up the correct polarization with the corner reflectors.	g. Connects lower mast section, mast camp, and upper mast section together. Ensures mast clamp position is under FWD or AFT on each mast. Attaches mast-rotating fixture on lower mast section.	g. Attaches antenna-to-mast adapters to reflectors for horizontal or vertical polarization per communications plan.

WARNING

Three people are required to install corner reflectors. If antenna is not held securely, it may fall and injure personnel or damage equipment. Use extreme caution in high winds. Equipment is hard to control.

Note:
Before raising roadside corner reflector, ensure the rear VHF whip antenna is lowered or out of the way for safe installation of corner reflector antenna.

h. Assists CM 3 with each antenna assembly.	h. Climbs up on the ICC/CRG shelter and prepares to take the antenna assembly from CM 3 and 1 for installation.	h. Per the communications plan, takes the correct corner reflector to curbside and or roadside.
i. Helps CM 2 and 3.	i. Installs the antenna assembly curbside and or roadside and secures.	i. Assists CM 2 install curbside and or roadside antenna assembly.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
	j. Wraps RF cables around upper mast section and ensures cables are secure. Passes RF cables to CM 3.	j. Takes RF cables from CM 2 and wraps RF cables around lower mast section. Ensures cables are secure.
3. Connects RF cables to connector panel and adjusts corner reflectors.	3. Connects RF cables to connector panel and adjusts corner reflectors.	3. Connects RF cables to connector panel and adjusts corner reflectors. a. Using communications plan, identifies RRTs to be used with corner reflectors, and connects RF cables from each antenna assembly to connector panel A26.

Note: Adjust corner reflectors from maximum signal reception when communications have been established.

b. Helps CMs 2 and 3 adjust the corner reflectors for maximum signal reception.	b. Loosens mast clamp on each corner reflector. Uses handle to rotate each antenna assembly to the azimuth directed by communications plan for maximum signal reception.	b. Helps CMs 1 and 2 adjust the corner reflectors for maximum signal reception.
	c. Climbs off the ICC/CRG.	

Note: Return to step 13 in Crew Drill 44-5-D005, or step 10 of Crew Drill 44-5-D006 and continue with the drill procedures.

APPENDIX E

ROAD MARCH CORNER REFLECTORS

PERFORMANCE MEASURES: Crewmembers complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Perform the following crew drill procedures for disassembling and stowing corner reflectors.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3

WARNING

To avoid injury to personnel, and damage to equipment, ensure that antenna is being supported while disassembling antenna mast.

1. Disassembles and stows corner reflectors.	1. Disassembles and stows corner reflectors.	1. Disassembles and stows corner reflectors.

Note: Ensure roadside rear VHF whip antenna is pulled down before corner reflector removal.

		a. Disconnects RF cables from connector panel A26.
b. Helps CM 3 unwrap RF cable from lower mast section (roadside).	b. Climbs onto the ICC/CRG shelter rear and waits for RF cables from CMs 1 and 3.	b. Unwraps RF cables from lower mast section (curbside).
c. Helps CM 3 remove RF cable from loop clamp, secures loop clamp, and passes RF cable up to CM 2.	c. Takes RF cables from CMs 1 and 3, unwraps RF cables from upper mast sections.	c. Removes RF cable from loop clamp, secures loop clamp, and passes RF cable up to CM 2.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3

WARNING

Three people are required to hold antenna in place while dismounting antenna mast.

WARNING

Equipment is hard to control. Use extreme caution in high winds. Personnel injury and equipment damage may occur if antenna is <u>not</u> held securely.

d. Holds antenna mast in place while removing the quick-release pin from mast guide bracket and inserts pin in mast clamp.	d. Helps CM 1 hold corner reflector until it is lowered.	
e. Carefully lifts mast assembly from mast support until mast disengages from mast guide bracket.	e. Helps CM 1 control corner reflector until it is lowered.	e. Helps CM 1 lift and control the mast assembly.
f. Carefully lowers mast assembly to ground while upper mast section remains in mast guide bracket.	f. While maintaining control of the upper mast section, rotates and removes the dipole element from corner reflector.	f. Helps CM 1 lower the mast assembly down to a safe location.
	g. Disconnects RF cable from dipole element.	
h. Takes reflector assembly and dipole element from CM 2. Folds reflector assembly to stow position.	h. Removes reflector assembly from antenna to mast adapter. Hands down the dipole element and reflector assembly to CMs 1 and 3.	h. Helps CM 1 with corner reflector parts.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
i. Disassembles the lower mast assembly. Takes any components from CM 2.	i. Disassembles the upper mast assembly and lowers parts down to CM 1 or CM 3.	i. Helps CM 2 lower upper mast assembly components.

2. Repeats step 1 above to disassemble the other corner reflector (curbside or roadside).

3. Returns the hardware required by disassembly of corner reflectors to exterior curbside storage compartment.

   a. Mast supports.

   b. Mast clamps.

   c. Mast rotating fixtures.

   d. Antenna to mast adapters.

WARNING

Two people are required to stow corner reflectors. Equipment is hard to control. Use caution in high winds.

4. Returns corner reflectors, dipole elements, and cables to storage bags (curbside).

5. Returns the mast sections to storage area in truck bed.

Note: Return to step 16 of Crew Drill 44-5-D011 and continues with the drill procedures.

APPENDIX F

ROAD MARCH PROTECTIVE ENTRANCE (PE)

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Perform the following crew drill procedures for removal and stowing of PE A108 during march order**.**

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
1. At compartment control module A48, sets POWER to OFF.	1. Assists as required.	1. Assists as required.
2. At lighting control panel A71, verifies NORMAL-OFF-MAINTENANCE switch is set to OFF.		
3. At distribution box A66, sets GAS FILTER UNIT to OFF.		
4. Goes to forward truck bed at GPFU and disconnects W100 P5 from J5. Installs dust caps.		
5. Disconnects and removes all air duct hoses between air conditioners and GPFU tee adapter.		
a. Installs all cover caps on tee adapter.		
b. Opens air door on bottom of tee adapter.		

Note: Keep air duct hoses free of dust and dirt.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
6. Disconnects air duct hose from GPFU to PE and hands it down to CM 2. Gives PE W100 cable to CM 3.	6. Takes the air duct hose from CM 1 and disassembles the five sections. Leaves one hose section connected to PE.	6. Takes the PE W100 cable from CM 1, coil cable and disconnects W100 P20 from J20 on PE roadside.
7. Climbs down from forward end of the truck bed and enters the PE to loosen screws on interface channel.	7. Positions to curbside of PE.	7. Positions to roadside of PE.
8. Steps out of PE, helps CMs 2 and 3 pull PE away from shelter.	8. Pulls PE away from shelter after CM 1 steps out.	8. Pulls PE away from shelter after CM 1 steps out.
9. Cleans PE floor and removes foreign objects.	9. Folds interface flap inside PE until it is flush with PE wall.	9. Helps CM 2 fold interface flap.

CAUTION

PE door must be securely latched and remain latched during removal procedures.

10. Enters PE, closes, and latches PE door.

WARNING

Top shell is heavy. Two people are needed to support top shell.

11. Helps CM 2 support PE top shell. Ensures that interface side of PE is firmly supported.	11. Supports PE top shell.	11. Helps CM 2 support PE top shell.

CAUTION

Support upper portion of rear support to prevent PE from collapsing.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
12. Continues to support PE top shell. a. Removes detent pin from angle brace. b. Pulls detent from middle of rear support. c. Raises angle brace and secures to rear support using detent pin. d. At top of rear support, pulls support free from upper shell. e. Folds rear support and angle brace. Guides folded joint of support into holding bracket. f. Removes remaining rear support. g. Exits PE, closes and latches door. h. At latch side of doorframe, removes detent pin. i. At hinge side of doorframe, removes other detent pin. j. Pushes inward on center of door.	12. Continues to support PE top shell.	12. Continues to support the upper shell.

CAUTION

PE sidewall air duct must be tucked in so that it lays flat and clears folded support assemblies.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3
13. Helps tuck all fabric inside bottom shell.	13. Continues to carefully lower top shell down to bottom shell. Tucks fabric walls as shell is lowered.	13. Helps CM 2 lower the top shell to bottom shell.

14. Before engaging top shell with bottom, ensure that all fabric clears mating surfaces.

15. Aligns top and bottom shells.

16. Engages and secures latches.

17. Removes air duct hose from top shell air inlet. Installs inlet cap.

18. Stores air duct hoses, hose adapters, and W100 cable in PE storage rack.

19. Places PE in storage rack and ensures that J20 electrical connector faces top of rack and air duct faces curbside.

20. Secures PE with straps.

Note: Return to step 14 of Crew Drill 44-5-D007, or step 26 in Crew Drill 44-5-D008 and continue with drill procedures.

APPENDIX G

ECS TO LCS CONFIGURATION

1. Ensure A178 COMPUTER SELECT is set to REAR.
2. Set MODE SELECT to position 3.
3. Press ENTER key. Display (figure 1) appears with flashing 0.

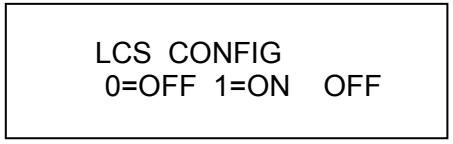

Figure 1.

4. Press 1 key to set LCS CONFIG to ON. 1 begins to flash.
5. Press ENTER key. Display (figure 2) appears with flashing 0.

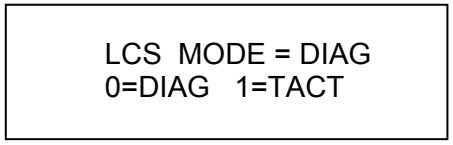

Figure 2.

6. Press 1 key to turn tactical mode on. 1 begins to flash.
7. Press ENTER key. Display (figure 3) appears with 1 flashing.

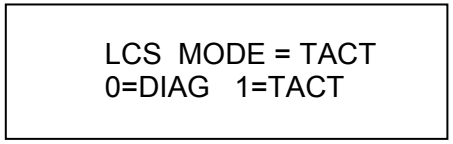

Figure 3.

8. Press ENTER key. Display (figure 4) appears with a flashing 1

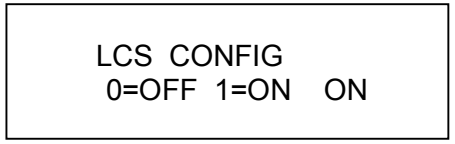

Figure 4.

9. Set MODE SELECT to position 0.
10. Press ENTER KEY.

APPENDIX H

AMG/CRG RECONFIGURED AS A LAUNCHING CONTROL STATION

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Perform the following crew drill procedures when the AMG/CRG is reconfigured to a Launching Control Station.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING
To avoid injury, do <u>not</u> lean over antenna maintenance platform edge to reach data link terminal.

	1. Data link antenna preparation.	1. Assists as needed.
	a. Climbs onto antenna maintenance platform.	
	b. At data link antenna storage tube, releases 2 clamping catches and removes data link antenna.	
	2. Data link antenna installation.	2. Assists as needed.
	a. Aligns hole in data link antenna adapter mounting plate with shoulder pin on lower mast section and installs data link antenna.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		b. Removes ground cable from spring clip and connects ground cable to ground connector on lower mast section. Removes RF coaxial connector cover, disconnects RF cable and connects to RF coaxial connector on lower mast section. c. Connects RF coaxial connector covers to dummy connector. d. Fully opens mast clamp so that lower mast section will clear clamp when raised. e. Climbs down from antenna maintenance platform. f. Swings antenna mast stop clear of mast base retainer. g. Notifies CM 4 that the antenna mast is ready to be raised.	

WARNING

Before raising data link antenna, ensure there are no overhead hazards or power lines. Clear all personnel from antenna maintenance platform and those in the path of antenna, particularly when lower mast section engages mast base retainer. Observe close clearance between DLT base handle and ECS shelter. Hand injury may occur.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4

WARNING

Data link antenna may be hot. Wear gloves to keep from injuring hands.

CAUTION

Damage to lower mast section and mast base retainer can occur when excessive force is used in engaging lower mast section with mast base retainer. Do not use excessive force when lowering mast section down to mast base retainer.

		3. Assists CM 4 as needed. a. Takes the lower mast section from CM 4 and carefully guides mast base into mast retainer slot. b. Secures antenna mast base-to-base retainer using the antenna mast stop.	3. Raise data link antenna. a. Climbs into rear of truck bed, at rear curbside corner of shelter, grabs rope on handle of mast counterweight and carefully swings lower mast section down to CM 3.

APPENDIX I

CRG RECONFIGURED AS A LAUNCHING CONTROL STATION

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

Note: Perform the following crew drill procedures when the CRG is reconfigured to a Launching Control Station

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		1. De-energize DLT, AN/VRC-90A (ICOM).	1. Set up VHF radios for remote operation.

Note: Determine the duration of power down. If time will <u>not</u> exceed 24 hours, refer to a, below. If time will exceed 24 hours, refer to b, below.

		a. If power down is not to exceed 24 hours, and radio AN/VRC-90A holding memories are to be saved or TOD synchronization is required, perform the following.	a. At power supply A25; verify AN/VRC-92A A87 and EXTERNAL ALARM POWER AMP A88 are set to ON.
		(1) At radio AN/VRC-90A, set FCTN to STBY.	
		(2) At A98 (mounting adapter) set CB1 to OFF.	
		(3) At distribution box A66, ensure BATTERY POWER is set to ON and 28 VDC-BATTERY POWER is on.	

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		b. If power down is to exceed 24 hours or radio AN/ VRC-90A holding memories are not to be saved, and TOD synchronization is not required, perform the following: (1) Sets AN/VRC-90A FCTN to OFF. (2) Sets A98 CB1 to OFF.	b. At local control radio set, verifies power ON/OFF switch is set to ON and TEL/-REMOTE Radio switch is in REMOTE position.
		c. At distribution box A66, sets DATA LINK TERM to OFF.	c. At VHF Radio, verify RT-A controls are at operating settings and tuned to correct frequency per communications plan.

WARNING

To avoid injury, do not lean over antenna maintenance platform edge to reach mast clamp.

			d. At remote control radio sets VOLUME-ON/OFF to mid-range and TEL/RAD/SPKR to RAD/SPKR.

CAUTION

Damage to lower mast section and mast clamp can occur if mast clamp is not fully open when lowering data link antenna. Ensure mast clamp is fully open before lowering data link antenna.

		2. Lowers data link antenna.	2. Assists CM 3 with lowering data link antenna.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		a. Ensures mast clamp is fully open.	
		b. Removes retaining pin from mast base retainer, and swing antenna mast until mast base is clear.	b. Climbs onto rear of truck bed.

WARNING

Before lowering data link antenna, clear all personnel from antenna maintenance platform and path of antenna to avoid antenna injury. Damage to lower mast section and mast clamp can occur when lowering data link antenna using excessive force. Use caution when lowering data link antenna. Observe close clearance between DLT base handle and ECS shelter. Hand injury may occur.

		c. Grabs rope on handle of mast counterweight and carefully swing lower mast section up to CM 4	c. At rear curbside corner of shelter, receives lower mast section from CM 3 and lower antenna to the stow position.
		d. At mast base retainer, swings antenna mast stop back into mast base retainer. Secure antenna mast stop with retaining pin.	d. Ensures lower mast section is in mast clamp. Climbs down from rear of truck bed.

WARNING

To avoid injury, do not lean over antenna maintenance platform edge to reach data link antenna.

WARNING

Data link antenna may be hot. Wear protective gloves to keep from injuring hands.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		3. Removes data link antenna. a. Climbs onto antenna maintenance platform using platform step. b. Secures lower mast section in place with mast clamp. c. Disconnects RF cable from coaxial connector. d. Removes connector cover from dummy connector on data link antenna. e. Connects RF cable to dummy connector on data link antenna. f. Installs connector cover on coaxial g. At lower mast section, removes ground cable from ground connector. h. Installs connector cover in ground cable and secure cable in spring clip on data link antenna.	3. Stands by and provides assistance to CM 3 as required.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
		i. At lower mast section, installs connector cover on ground connector. j. Removes data link antenna from lower mast section	
		4. Stows data link antenna. a. Instalsl data link antenna into data link antenna storage tube and secure with two clamping catches.	4. Stands by and provides assistance to CM 3 as required.

WARNING

Shock hazards exist; A66 UHF AMS PWR AMPL, A41 ANT CONT UNIT, and RRT circuit breakers must be shut off before disconnecting cables.

APPENDIX J

TADIL-A ANTENNA EMPLOYMENT

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
	1. Moves TADIL-A antenna containers to emplacement site.	1. Assists CM 2.	
2. Unreels roadside TADIL-A data cable. Pulls and lays out both cables (4W2/TADIL-A) to pre-amp box and TADIL-A site.	2. Removes and lays out TADIL-A components.	2. Assists CM 2.	2. Assists CM 1.
3. Unreels curbside TADIL-A voice cable. Unreels remaining cable. Connects voice cable to port CP 8 and data cable to CP 7. Lays cable to TADIL-A site.	3. Lays out antenna swivel stake, ground stakes and guy wires (loose).	3. Assists CM 2.	3. Assists CM 1.
4. Drives in ground stakes and secures guy wires.	4. Assembles complete antenna with RF cable, attaches mast to swivel stake and raises data antenna.	4. Assists CM 2.	4. Assists CM 1.
5. Adjusts tension (tight) on guy wires.	5. Supports antenna.	5. Adjusts tension (tight) on guy wires.	5. Adjusts tension (tight) on guy wires.

APPENDIX K

TADIL A ANTENNA REMOVAL

PERFORMANCE MEASURES: Crew members complete their performance measures as they are stated and in the sequence shown. They must synchronize the completion of like-numbered performance measures.

CREW MEMBER 1	CREW MEMBER 2	CREW MEMBER 3	CREW MEMBER 4
1. Releases tension on TADIL-A guy wires.	1. Supports TADIL-A antenna.	1. Releases tension on TADIL-A guy wires.	1. Releases tension on TADIL-A guy wires.
2. Disconnects guy wires from stakes.	2. Lowers TADIL-A antenna.	2. Disconnects guy wires from stakes.	2. Disconnects guy wires from stakes.
3. Removes voice and data cables from antenna, reels, and secures.			3. Assists CM 1.
4. Pulls up ground stakes.	4. Removes antenna from swivel base and breaks down antenna.	4. Assists CM 2.	4. Assists CM 1.
5. Assists in antenna break down and packing.	5. Packs antenna into duffel.	5. Assists in antenna break down and packing.	5. Assists in antenna break down and packing.
6. Assists CM 2.	6. Moves antenna duffel bags to rear of TCS.	6. Assists CM 2.	6. Assists CM 2.

GLOSSARY

AC, ac
Active Component; assistant commandant; alternating current; aircraft

ack
acknowledge, acknowledgement; acknoledged

ADA
air defense artillery

ADSI
air defense system integrator

AMDPCS
air and missile defense planning and control system

AMDWS
Air and Missile Defense Workstation

AMG
antenna mast group

amp
amplifying; amplifier

AMS
antenna mast set

ant
antenna

ARTEP
Army Training and Evaluation Program

attn
attention

B
before

BCP
battery command post

bn (BN)
battalion

BSC
battle staff coordination

btry
battery (unit)

CADCI
common air defense communications interface

CBR
chemical, biological, and radiological

ccw
counterclockwise

CLS
contractor logistics support; colocated switch

CM
crew member; cruise missile

CMP
computer maintenance panel; configuration management plan

contr
control; controller

CRG
communications relay group

CW (cw)
clockwise

D
during; daily; demonstration

DA
Department of the Army

DC, dc
District of Columbia; direct current

distr
distribution

DNVT
digital nonsecure voice terminal

DSVT
digital secure voice terminal

DTS
data terminal set

ECS
engagement control station

ECU
environmental control unit

EDR
embedded data recorder (Patriot)

EPP
electric power plant

FDS
fire distribution section: fire direction section

FM
field manual; frequency modulation

FORSCOM
United States Army Forces Command

FU
fire unit

GCFU
ground communication filter unit

GMT
guided missile transporter

GPFU
gas particulate filter unit

GPS
gunnery primary sight; Global Positioning System

HCU
hard copy unit; high-capacity computer unit

HEMTT
heavy expanded mobility tactical truck

ICC
information and coordination central; information control center

ICOM
integrated COMSEC; imbedded communications

IDOCS
integrated digitatl operator control station

IFF
identification, friend or foe

init
initialize

ISLB
initial search lower bounds

JTIDS
Joint Tactical Information Distribution System

kw
kilowatt

LCU
launcher control unit; lightweight computer unit

MOPP
mission-oriented protective posture

MSE
missile support element; mobile subscriber equipment; multisubscriber equipment

MTP
mission training plan; MOS training plan

NBC
nuclear, biological, and chemical

OCU
operations control unit; operators console unit (THAAD)

ODS
Optical Disk System; operator decision specification; Operation Desert Storm

ODU
optical disk unit

OIC
officer in charge

Ord, ORD
ordnance; operation requirements document

OSLB
operational search lower bound

PCU
peripheral control unit

PDB
post deployment build (Patriot); power distribution box

PDU
power distribution unit

PE
pulse expansion; protective entrance; practical exercise

PLGR
precision lightweight GPS receiver

PMCS
preventive maintenance checks and services

PTL
primary target line

pwr
power

RF
radio frequency

RLRIU
routing logic radio interface unit

RRT
radio relay terminal

RSOP
reconnaissance, selection, and occupation of position; readiness standing operating procedures

RTO
radiotelephone operator

SATCOM
satellite communications

SMU
switch multiplexer unit

SOA
state of alert

SOP
standing operating procedure

sply
supply

STBY
standby

STP
soldier training publication

T&EO
training and evaluation outline

TADIL
tactical digital information link

TAMMS
The Army Maintenance Management System

TBM
tactical ballistic missile

TCS
Tactical Command System; Tactical Control Station (THAAD/Patriot)

TD
tactical director; training development

TDA
tactical director assistant; Table of Distribution and Allowance

TIBS
Tactical Intelligence Broadcast Service; Theater Information Broadcast Service

TM, tm
technical manual; theater missile; team

TOD
time of day

TOE
table of organization and equipment

TPW
tactical planner workstation; training program worksheet

TRADOC
Training and Doctrine Command

TSEC
telecommunications security

TSOP
tactical standing operating procedure

UHF
ultrahigh frequency

vac
volts alternating current

VDC
volts direct current

VHF
very high frequency

wpn
weapon

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ARTEP 44-635-12 DRILL
17 OCTOBER 2003

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